

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 349. (No. 36, Vol. VII.)

SEPTEMBER 3 1915.

[Registered at the G.P.O.] [Weekly, Price 8d.
as a Newspaper. Post Free, 8½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.
Telegrams: Truditur, Westrand, London. Telephone: Gerrard 1828.
Annual Subscription Rates, Post Free.
United Kingdom ... 15s. 6d. Abroad ... 20s. 6d.

CONTENTS

	PAGE
Editorial Comment :	
Air Raiding Day by Day	643
R.A.C. House Facilities	644
Aircraft Work at the Front. Official Information	646
The British Air Services	647
Aeroplane versus Submarine	648
The "X" Aircraft Raids	648
Royal Aero Club. Official Notices	649
Some American Aero Engines—The Curtiss	650
From the British Flying Grounds	654
Flying at Hendon	655
Eddies. By "Æolus"	656
Aircraft and the War	658
Models	659
Thomas Aeromotor	660

EDITORIAL COMMENT.

Writing on the first day of September, 1915, one can confidently claim that the previous week's announcements of air work, in connection with the European hostilities, easily scores a record to date for frequency of attack, the numbers engaged, and the damage, material, moral and novel, effected. We have, however, every confidence that before peace comes to the world again, the regular activity of the air squadrons of the Allies will tend to very greatly increase, rather than the reverse, and the record of the past week may be taken as merely a sample foretaste of what may be expected during the months of continued warfare which it is not unreasonable to anticipate will ensue.

Enumeration of the feats performed is unnecessary, as they are all set forth in their proper places in "FLIGHT" in due order of happening, but a little analysis of the individual attacks brings out perhaps in stronger light the remarkable influence which the Air Services are exercising upon the daily operations of the forces opposed to each other.

Firstly came the announcement of the sinking the previous week of a Turkish transport by Flight Lieutenant Edmonds in the Dardanelles, followed by the notification from the Admiralty of the splendid work on

the 20th of Squadron-Commander A. W. Bigsworth, R.N., in destroying, single-handed, a German submarine off Ostend, by dropping bombs from an aeroplane—not from a seaplane, as might have been expected. Both this feat and that of Lieutenant Edmonds were the first instances on record of the destruction by warplanes of respectively a transport and a submarine, no small records in themselves, although in the latter case the German official report endeavours to dodge the facts.

In the case of Squadron-Commander Bigsworth, he had already, amongst other very active work, especially distinguished himself by his attack on the Zeppelin raider off Ramsgate, on 17th May, when he managed to get home a bomb full on to the dirigible as she was making her usual rush back home after a night's bomb-scattering adventure.

On the same day as the news of Commander Bigsworth's score, was announced the raid on the 24th by four detachments of French airmen, comprising 62 machines, over Dillingen, in the Rhine Province, where the squadrons' objective was the big ironworks engaged in manufacturing shells and armour plate for the Germans. This they handled pretty roughly, shedding no less than 150 bombs "with precision," of which a matter of 30 were of large calibre. It may have been but the coincidence of routine, but side by side with this work on the 24th came, on the same day, the further announcement of another important attack on the next day, the 25th, when the pilots of the Allies to the number of 60, including, French, British, and Belgian units, made a joint onslaught against the Forest of Houlthulst, an important enemy stronghold, N.E. of Ypres, causing a series of disastrous fires. Meanwhile other raids by French pilots were on this day also carried out, the places visited and bombed being Woevre, the German cantonments at Dannes and Baussant, the railway stations and German bivouacs at Grandpré Chatel, Cermay, and Fleville in the Argonne, the station of Tergnier, the aviation park at Vitry (in Artois) and the railway station of Boisieux. Finally, by way of finishing up this day's work, the French during the night dropped 127 bombs on Noyons railway station.

And, be it noted, official *communiqués* state that no loss of machines resulted. Next day, the 26th, the game was once more in progress, this time the Allied craft making for the asphyxiating gas factory at Dornach, where they left evidence of their visit in the form of ten large calibre bombs, whilst the following morning another

squadron attacked the station and electrical installation at Mülheim in the Grand Duchy of Baden. In addition to the foregoing there were innumerable and incessant minor attacks by aircraft of each of the Allies, all of which go to build up a magnificent monument to the efficiency of the Allies.

It is true the official German versions of these raids, where they mention them at all, minimise the mischief resulting, whilst embellishing the details with just sufficient truth to suggest a certain amount of doubt as to the correctness of the French official note, to anyone reading and comparing the two. When the time comes presently, as we hope it may, for the strictly true story to be told, it will be extremely interesting to be able to place side by side a *résumé* of the exact amount of damage done during each of these individual adventures, with the versions as given now from "information received."

When we glance at the *contra* side of the war in the air, there certainly appears to be a very heavy deficit in effective work to the credit of our enemies. The activity of the German pilots is nothing like as great in any case as with the Allies' squadrons, and we are not very impressed with the suggestions of their holding back huge fleets of all sorts of fearsome aircraft until "der Tag," when they will spring a great surprise upon us by letting loose clouds of machines, which will overwhelm our flights and turn the tables upon those who hold that the Allies' flying services dominate the air for aggressive and scouting purposes. The Germans may possibly make a bid for redeeming some of their lost effectiveness in this direction, but that they will reverse the present position, except very temporarily and in isolated areas, we do not for one moment believe. They would certainly be making a more strenuous bid for ascendancy than by such a demonstration of weakness as their attempt to attack Paris by aeroplanes on the morning of Saturday last, when half-a-dozen pilots made a concerted approach to the French capital, but were ignominiously driven off by the French air guards, one of the enemy's planes—Aviatik C 311-150-1,075—being brought down, both pilot and machine being destroyed, the rest of the visitors making every haste to get back from whence they came, after dropping some bombs haphazard, at various outlying districts, resulting in a bag at Compiègne of two nurses and one child killed.

If further corroboration were needed of the general policy of air work in relation to military requirements, whilst conforming to the international laws of war, and the violation by the Germans of all the rules hitherto governing civilised nations in this respect, it is surely to be found in the letter of Mr. Balfour, the First Lord of the Admiralty, which we reproduce elsewhere this week. This communication, which has been issued by the Press Bureau, deals mainly with the reasons for and objects of suppressing the names of places and all particulars of the Zeppelin raids upon England, a procedure which readers of "FLIGHT" will appreciate, as it was mainly at our suggestion that this course was adopted. But incidentally, whilst it brings out the utter futility of the Zeppelin policy as carried out, it is a strong indictment against the shameful and piratical tactics of the German High Command in this connection, and will for all time stand in history as an official protest against the brutal and murderous methods of the Kaiser and his advisers.

How in contrast the methods of this country's flying services stand out, both in their every individual member and in their work as a whole, is evident, and is appreciated the world over. With last week we have in this

connection reminders in the honours lists, including the V.C. awarded to Captain Liddell, and in the death of Captain Mapplebeck, of earlier deeds of distinction, whilst, by way of a final mark of recognition, came the list of Russian decorations to the British forces, names from the Royal Flying Corps being well represented in this record for distinction. Altogether an epoch-making week in the history of aviation.

• • •

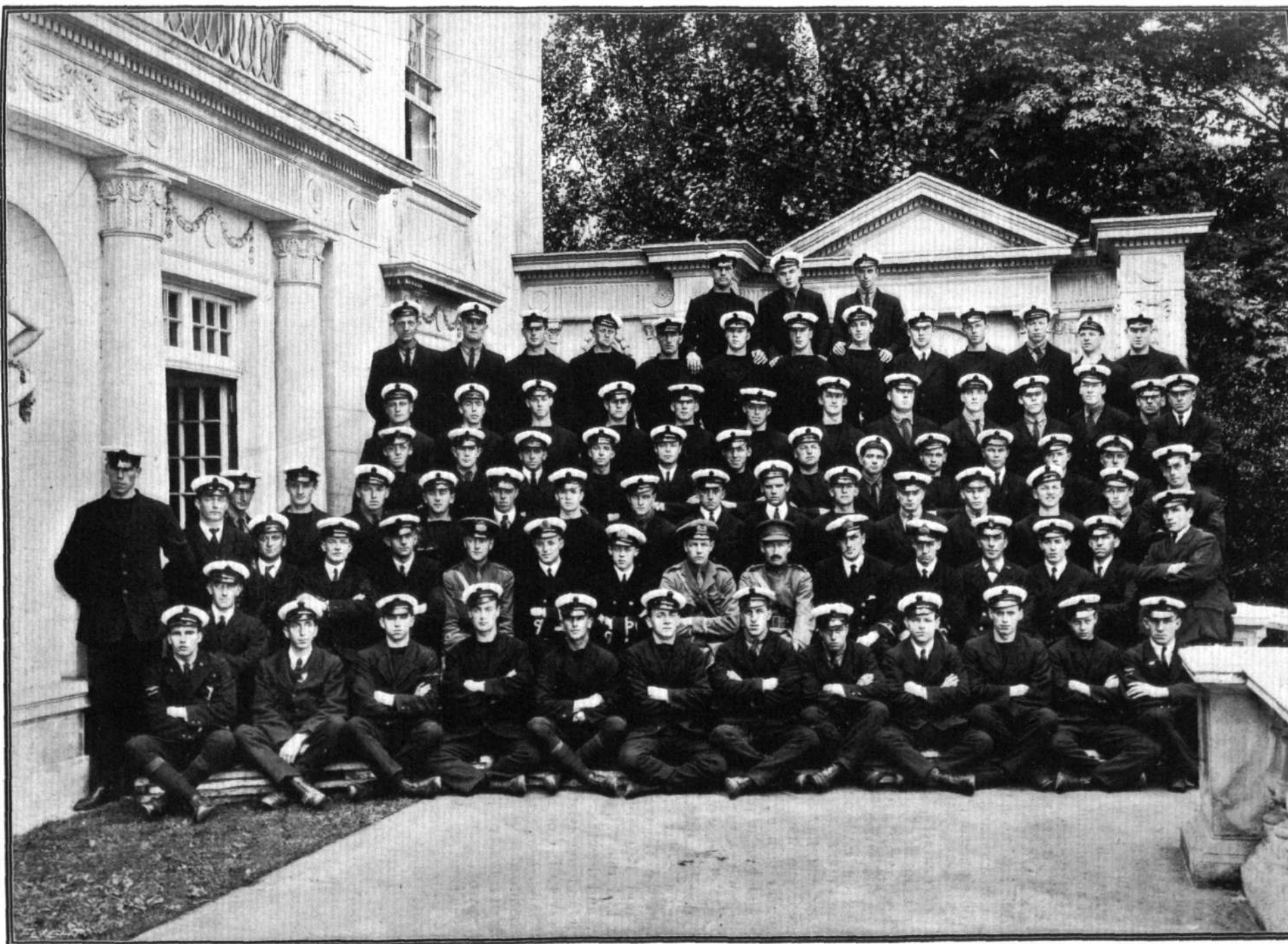
R.A.C. House Facilities.

Some time before the war started, following the desires of a number of the club members for the extension of the social side of the Royal Aero Club, as a natural outcome of the splendid work done by the club as a society of encouragement, and by way of recompensing its early supporters for the missionary work which had so greatly helped to its success, a movement was in contemplation for enlarging its sphere in this direction by taking premises more in keeping with the important position which by their work the club had attained. The war intervened, and for the moment, for various obvious reasons, the idea had to be shelved temporarily. But it was speedily evident from the first that, so far from the war affecting the club adversely, there was every prospect of aviation developing so rapidly that the end of hostilities would in all probability see it founded on an unassailable foundation. We took this view ourselves and expressed it in these columns, prophesying a highly prosperous career for the club in the coming days—and we are more than ever convinced of this being the outcome of the present activities.

With the memory of what aviation, through its pioneers and exponents, has done for this Nation and the Civilized World in general, as a result of the war, it should become more than ever a privilege and an honour to be numbered amongst the members of the Royal Aero Club, and we have every confidence that a very large influx of members will be forthcoming in the not very remote future, which will assist the committee to carry out in sound form the wishes of the members in regard to acquiring a clubhouse worthy of its occupants. Signs are not wanting that the tide is beginning to flow that way, and we therefore welcome the official notification to which we drew attention last week to the effect that the committee had arranged for the present premises to be open, as from September 14th, daily, including Sundays, from 9 a.m. until 10.30 p.m. This is a distinct move in the right direction, and will give a large circle of members hitherto debarred by reason of the restricted clubhouse hours a much better chance of meeting and exchanging views day in and day out. It should also induce new members to join up, and thereby help to spread the movement generally, and we congratulate the committee upon the very wise move which they have inaugurated by way of a prelude to further development. The possibilities of the strength of the club may be in a way gauged by the rapidly-growing roll of pilots, now close upon 1,700. These men, irrespective of the large number associated with aviation who do not actually fly, must necessarily require some common ground, where they can be sure of getting together and being able to discuss the subject with which they are most closely concerned. Within the precincts of their own clubhouse should be ideal in every respect for this object. So we hope to see presently a distinct spurt in the candidates for election, and to find the clubrooms the recognised gathering place for all who matter in the world of aeronautics.

SEPTEMBER 3, 1915.

FLIGHT



The officers and men of No. 8 Section, Kite-Balloon Service, R.N.A.S.

Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters, Aug. 30th.

"BOTH on the 18th and 21st we succeeded in shooting down enemy aeroplanes. On the 25th our heavy artillery set light to a railway train at Langemarck Station, and on the same evening our Royal Flying Corps co-operated with our Allies in an aerial attack on the Forest of Houthulst, which was successfully carried out without the loss of any machines."

French.

Paris, Aug. 25th. Afternoon.

"An Aviatik dropped four bombs on Vesoul, slightly injuring a woman and a child. The material damage done was insignificant."

Paris, Aug. 25th. Evening.

"One of our aeroplanes last night bombarded the railway station of Lörrach, in the Grand Duchy of Baden."

Paris, Aug. 26th. Afternoon.

"During the 24th one of our aeroplanes bombarded the station of Offenburg, an important junction in the Grand Duchy of Baden."

"Yesterday a flotilla of four detachments of aeroplanes, 62 in number, flew over the Dillingen ironworks (a shell and armour-plate factory, north of Saarlouis), upon which were thrown with precision over 150 bombs, including 30 of large calibre."

Paris, Aug. 26th. Evening.

"During the day of the 25th our aeroplanes bombarded in the Woevre the German cantonnements at Dannes and Baussant, causing a fire. The railway stations and the German bivouacs at Grandpré Châtel, Cernay, and Fleville, in the Argonne, the station of Tergnier and the aviation park at Vitry, in Artois, and the railway station of Boisleux were also bombarded by our machines."

"A bombardment by aeroplanes of the French, British, and Belgian Armies and of the French and British Navies, acting in concert—sixty aeroplanes in all—was effected against the Forest of Houthulst, where several fires broke out. All the aeroplanes returned."

"During the night of the 25th one of our air squadrons dropped 127 bombs on the station of Noyon."

Paris, Aug. 27th. Afternoon.

"Yesterday our aeroplanes bombarded in the Woevre Saint Baussant and Essey. In the Argonne the stations of Ivoiry and Cierges were also bombarded by our machines, following an attack by German aircraft on Clermont-en-Argonne, where the bombs dropped by the Aviatiks caused no loss of human life or material damage."

"On the night of Aug. 26th one of our aircraft dropped about 10 bombs on the asphyxiating gas factory at Dornach."

"On the morning of Aug. 27th a squadron of aircraft bombarded the station and the electrical installation at Mülheim, in the Grand Duchy of Baden. All our machines returned safely."

Paris, Aug. 28th. Afternoon.

"Our aeroplanes during the night bombarded the railway station at Châtel in the Argonne."

Paris, Aug. 28th. Evening.

"This morning, shortly before ten o'clock, six German aeroplanes ascended, three from the region of Soissons

and three from the region of Compiègne, and flew in the direction of Paris. They were not able to attain their objective, and only threw bombs on Nogent-sur-Marne, Montmorency, Mont Fermeil, Rubécourt, and Compiègne. Nobody was hurt, except at Compiègne, where two nurses and a child were killed."

"Immediately the enemy aeroplanes were sighted they were bombarded at different points, and were chased by our machines. The commander of one of our squadrons pursued one of the German machines at a height of 3,600 metres, and brought it down to the north of Senlis. The pilot was incinerated, and his machine was destroyed by fire."

Paris, Aug. 29th. Afternoon.

"Our aeroplanes bombarded last night the railway station and the hutments of the enemy at Grand Pré, as well as the hutments at Moncheutin and Lancon, in the Argonne."

Italian.

Rome, Aug. 25th.

"This morning an Austrian aeroplane flew over Brescia, and, successfully evading the shells of our anti-aircraft guns, threw four bombs, killing six persons and wounding several others, all belonging to the civilian population."

Rome, Aug. 27th.

"On the evening of the 25th, favoured by a full moon, our seaplanes dropped bombs on the fortified place of Riva, and, escaping the fire of the anti-aircraft batteries of the enemy, returned safely to our lines."

Rome, Aug. 29th.

"As our aerial reconnaissances show that the enemy was already hastening to repair the damage caused by the recent raids of our aviators over the Aisovitzia aerodrome, this was once more bombarded yesterday morning by our flying squadrons. One hundred and twenty bombs were dropped. Two hangars were hit in the centre, and the whole camp was damaged. Here and there fires broke out. Our aviators, although for half an hour under the fire of numerous batteries, returned safely from this daring raid."

Rome, Aug. 30th.

"Our daring aerial raids, which are always directed towards military objectives, continue with success. Yesterday we bombarded the station at Vogersko, large enemy encampments near Kostange Vica, and ammunition depôts at Sesana. Our machines were not damaged."

German.

Berlin, Aug. 25th.

"A German battle-aviator the day before yesterday shot down a French biplane near Nieuport."

Berlin, Aug. 26th.

"Two hostile air squadrons yesterday dropped bombs on the Saar Valley above and below Saarlouis. Several persons were killed and wounded, but the material damage was unimportant. Prior to their start the air squadrons were successfully attacked by our aviators in the aerodrome at Nancy, and, moreover, the squadrons lost four machines. One fell down in a burning condition near Bolchen, pilot and observer being killed; one was captured by us with its occupants near Remilly; a third machine was forced to land by a German battle-aviator

near Arracourt, north of Lunéville, before the French lines, and was destroyed by our artillery; a fourth aviator landed under the fire of our anti-aircraft guns near Moivrons, south of Nomeny, behind the enemy lines."

Berlin, Aug. 28th.

"Along a great portion of the front there has been vigorous activity on the part of artillery and airmen. Enemy airmen unsuccessfully bombarded Ostend, Middle-

kerke, and Bruges. At Mülheim, in Baden, three civilians were killed by bombs dropped by an airman."

Turkish.

Constantinople, Aug. 30th.

"Our airmen who took part in the battle (on Saturday) successfully dropped bombs on the hostile positions."

THE BRITISH AIR SERVICES.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 26th ult. :—

Flight-Commander J. T. Gull granted the acting rank of Squadron-Commander. To date Aug. 22nd.

R. C. Michell entered as Probationary Flight Sub-Lieutenant, and appointed to the "President," additional, for R.N.A.S. To date Aug. 25th.

The following appeared among the Admiralty announcements of the 30th ult. :—

Late Lieut. (R.N.R.) J. Hills, restored to the Retired List of R.N.R., as Lieutenant-Commander, with seniority of March 31st, 1813, and appointed to "President," additional, for R.N.A.S. Aug. 28th.

Temporary Lieut. (R.N.V.R.) G. S. Allfree, to "President," additional, for R.N.A.S. Aug. 28th.

Temporary Sub-Lieut. (R.N.V.R.) H. J. Arnold, entered as Probationary Flight Sub-Lieutenant for temporary service, with seniority of Aug. 27th, and appointed to "President," additional, for R.N.A.S.

Acting Assistant Paymaster (R.N.R.)—H. Humby, transferred to the R.N.A.S., as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Aug. 29th, and appointed to "President," additional, for R.N.A.S.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants with seniority as follows, and all appointed to "President," additional, for R.N.A.S. : H. A. J. Wilson, (A.B., R.N.V.R.), Aug. 27th; T. R. Hackman and J. G. Hudson, Aug. 29th; H. A. Peck, July 23rd; R. G. Gardner, Aug. 29th; and J. R. M. Sadleir, Aug. 30th.

The following temporary commissions have been granted :—Lieutenants (R.N.V.R.)—W. J. Polybank, L. C. Cox, and H. E. Wimperis, with seniority of Aug. 29th, and appointed to "President," additional, for R.N.A.S.

Sub-Lieutenants (R.N.V.R.)—R. F. Bellamy, with seniority of Aug. 28th, and L. Middleton, with seniority of Aug. 29th, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 31st ult. :—

Squadron Commander.—F. E. T. Hewlett, to "President," additional. Aug. 30th.

Probationary Flight Sub-Lieutenants.—L. E. R. Murray, F. H. M. Maynard, S. B. Joyce, D. J. Sheehan, H. O'Hagan, G. F. Smylie, F. J. Linnell, L. C. Keeble, all confirmed in the rank of Flight Sub-Lieutenants, with original seniority, and reappointed to "President," additional, for R.N.A.S. Aug. 30th.

Temporary Flight Sub-Lieutenants.—E. M. Pizey, F. H. Smith, W. B. Lawson, S. D. Felkin, C. H. M. Chapman, and C. A. Maitland-Heriot, all confirmed in the rank of temporary Flight Sub-Lieutenants, with original seniority, and reappointed to "President," additional, for R.N.A.S.

Temporary Lieutenant (R.N.V.R.)—R. Griffin, transferred to the R.N.A.S. as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Aug. 30th, and appointed to "President," additional, for R.N.A.S. (temporary commission and appointment as Lieutenant (R.N.V.R.) terminated).

Temporary Sub-Lieutenant (R.N.V.R.)—M. Bartlett transferred to R.N.A.S. as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Aug. 30th, and appointed to "President," additional, for R.N.A.S.

Temporary Captain (R.M.)—F. Summers, to "President," for R.N.A.S. Sept. 4th.

Warrant Officer (2nd grade) C. R. A. Abbott, and Mr. W. E. Tinson both granted temporary commissions as Lieutenant (R.N.V.R.), with seniority of Aug. 30th, and appointed to "President," additional, for inspectional duties with R.N.A.S.

J. F. Jones and R. E. Greensmith both entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of Sept. 5th, and appointed to "President," for R.N.A.S.

H. Foord granted temporary commission as Sub-Lieutenant

(R.N.V.R.), with seniority of Aug. 30th, and appointed to "President," additional, for duty with R.N.A.S.

Temporary Second Lieut. and Hon. Capt. (Royal Marines) A. D. Isaacs, temporary commission and appointment to Royal Marines terminated, Aug. 25th, and granted temporary commission as Lieutenant in the R.N.V.R., with seniority of Aug. 26th, and appointed to "President," for duty with R.N.A.S.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 25th ult. :—

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in rank : V. W. Eyre, C. H. Friese-Greene, C. G. Tucker. To be Second Lieutenants (on probation), Aug. 5 : A. Charig and J. S. Castle.

The following appeared in a supplement to the *London Gazette* issued on the 26th ult. :—

Squadron-Commanders to be Wing-Commanders, and to be temporary Lieutenant-Colonels whilst so employed.—Aug. 18th : Brevet Major C. A. H. Longcroft, Welsh; Capt. (temporary Major) L. E. O. Charlton, D.S.O., Lancs F.; Major W. G. H. Salmond, R.A.

Equipment Officers.—Capt. A. ap Ellis, W. Riding Divl. Signal Co., R.E., T.F.; Aug. 11th. Qrmr. and Hon. Lieut. J. Ramsay, R.F.C., from an Assistant Equipment Officer, and to be temporary Captain whilst so employed; Aug. 15th.

Assistant Equipment Officers.—Aug. 13th : Second Lieut. V. W. Eyre, S.R.; Second Lieut. C. G. Tucker, S.R.; Second Lieut. C. H. Friese-Greene, S.R.

Flying Officers.—July 30th : Lieut. M. G. F. Richardson, Northd. F.; temporary Lieut. L. Y. K. Murray, R.A., and transferred to General List; temporary Second Lieut. T. S. Impey, R.A., and transferred to General List; Second Lieut. C. E. Wardle, S.R.; temporary Second Lieut. A. C. Collier, R. Lanc., and transferred to General List. Aug. 14th.

Supplementary to Regular Corps.—To be Second Lieutenants (on probation) : C. W. Snook; July 14th. T. Marburg; Aug. 11th.

The following appeared in the *London Gazette* of the 27th ult. :—*Wing-Adjutants.*—Capt. James A. M. Lang, Sherwood Foresters (Nottinghamshire and Derbyshire Regt.), and to be seconded; Aug. 2nd, 1915. Capt. Anthony Marshall, D.S.O., 28th Light Cavalry, Indian Army; Aug. 12th, 1915.

The following appeared in a supplement to the *London Gazette* issued on the 28th ult. :—

Flying Officers.—Second Lieut. H. R. Johnson, Special Reserve; Aug. 11th, 1915. Temporary Second Lieuts. H. W. Medlicott and M. H. B. Nethersole, R.A., and to be transferred to the General List; Aug. 14th, 1915. Second Lieut. O. V. Le Bas, Queen's (Royal West Surrey Regt.), and to be seconded; Aug. 16th, 1915.

The following appeared in a supplement to the *London Gazette* issued on the 30th ult. :—

Non-commissioned officer to be Second Lieutenant for service in the Field :

Royal Horse and Royal Field Artillery.—Bombardier Edward Robinson, and to be seconded for duty with the Royal Flying Corps; July 26th, 1915.

Brigade Commanders.—Brevet Col. Hugh M. Trenchard, C.B., D.S.O., Royal Scots Fusiliers, Aide-de-Camp to the King (extra), and to be temporary Brigadier-General whilst so employed. Brevet Lieut.-Col. John F. A. Higgins, D.S.O., Royal Artillery, and to be temporary Brigadier-General whilst so employed.

Flight Commander.—Lieut. Arthur V. Bettington, Special Reserve, and to be temporary Captain whilst so employed; Aug. 19th, 1915.

Gunner J. R. Allan, from the Canadian Field Artillery, to be temporary Second Lieutenant for duty with the Royal Flying Corps; July 1st, 1915. (Substituted for the notification which appeared in the *Gazette* of Aug. 19th, 1915.)

Supplementary to Regular Units or Corps.—Second Lieut. (on probation) Harold R. Johnson is confirmed in his rank.



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.
Squadron-Commander Arthur W. Bigsworth, R.N.

AEROPLANE VERSUS SUBMARINE.

THE Press Bureau on the 26th ult. issued the following:—

"The Secretary of the Admiralty announces that Squadron Commander Arthur W. Bigsworth, R.N., has destroyed single-handed a German submarine this morning by bombs dropped from an aeroplane.

"The submarine was observed to be completely wrecked and sank off Ostend.

"It is not the practice of the Admiralty to publish statements regarding the losses of German submarines, important though they have been, in cases where the enemy have no other source of information as to the time and place at which these losses have occurred.

"In the case referred to above, however, the brilliant feat of Squadron Commander Bigsworth was performed in the immediate neighbourhood of the coast in occupation of the enemy, and the position of the sunken submarine has been located by a German destroyer."

THE following announcement of the German Admiralty was circulated through the wireless stations on Saturday:—

"The English Admiralty announced on August 27th that a German U boat had been completely destroyed and sunk by an English naval aeroplane before Ostend. The report is incorrect. It is true that the U boat was attacked by the aeroplane, but it was not hit, and returned to the harbour undamaged."

It may be recalled that on May 17th. Flight Commander Bigsworth (as he then was) dropped bombs on a Zeppelin, which had raided Ramsgate early that morning.

THE "X" AIRCRAFT RAIDS.

THE First Lord of the Admiralty has addressed the following letter to a correspondent. It is issued through the Press Bureau and therefore partakes of the nature of an official statement:—

"Admiralty, S.W., August 28th, 1915.

"Dear Sir,—You ask me why the accounts published in this country of enemy air raids are so meagre, while the German narratives of the same events are rich in lurid detail. You point out that while these narratives are widely believed in neutral countries, the reticence of the censored British Press suggests a suspicion that unpleasant truths are being deliberately hid from a nervous public. Compare the following accounts, which, though the historian would never guess it, relate to the same airship raid:—

TRANSLATION.

Headlines of *Deutsche Tageszeitung*.

August 11th, 1915.

AIR ATTACK ON THE DOCKS OF LONDON.

"On the night of August 9th-10th our naval airships carried out attacks upon fortified coast towns and harbours on the east coast of England.

"In spite of strenuous opposition, bombs were dropped on British warships in the Thames, on the docks of London, on the torpedo-craft base at Harwich, and on important positions on the Humber.

"Good results were observed.

"The airships returned safely from their successful undertaking."

FROM ADMIRALTY.

August 10th, 1915.

"A squadron of hostile airships visited the East Coast last night and this morning between the hours of 8.30 p.m. and 12.30 a.m.

"Some fires were caused by the dropping of incendiary bombs, but these were quickly extinguished, and only immaterial damage was done.

"The following casualties have been reported:—

"1 man, 8 women, and 4 children killed.

"4 men, 6 women, and 2 children wounded.

"One Zeppelin was seriously damaged by gunfire of the land defences, and was reported this morning being towed into Ostend. She has since been subjected to continual attacks by aircraft from Dunkirk under heavy fire, and it is now reported that after having had her back broken and rear compartments damaged, she was completely destroyed by explosion."

"Now it is plain that if one of these stories is true the other is false. Why not, then, explain the discrepancy and tell the world in detail wherein the German accounts distort the facts?

"The reason is quite simple. Zeppelins attack under cover of night, and (by preference) of moonless night. In such conditions landmarks are elusive and navigation difficult. Errors are inevitable and sometimes of surprising magnitude. The Germans constantly assert, and may sometimes believe, that they have dropped bombs on places which in fact they never approached. Why make their future voyages easier by telling them where they have blundered in the past? Since their errors are our gain, why dissipate them? Let us learn what we can from the enemy; let us teach him only what we must.

"Nobody will, I think, be disposed to doubt that this reticence is judicious. But the question may still be asked whether it is used not merely to embarrass the Germans but unduly to reassure the British? How ought we to rate the Zeppelins among weapons of attack? What have they done? What can they do?

"To this last question I do not offer a reply. I cannot prophesy about the future of a method of warfare which is still in its infancy. I can, however, say something of its results during the past.

"That it has caused much suffering to many innocent people is unhappily certain. But even this result, with all its tragedy, has been magnified out of all proportion by ill-informed rumour. I am assured by the Home Office that during the last twelve months 71 civilian adults and 18 children have been killed; 189 civilian adults and 31 children have been injured.

"Judged by numbers, this cumulative result of many successive crimes does not equal the single effort of the submarine which, to the unconcealed pride of Germany and the horror of all the world, sent 1,198 unoffending civilians to the bottom in the *Lusitania*. Yet it is bad enough, and we may well ask what military advantage has been gained at the cost of so much innocent blood.

"The answer is easily given. No soldier or sailor has been killed; seven have been wounded; and only on one occasion has damage been inflicted which could by any stretch of language be described as of the smallest military importance. Zeppelin raids have been brutal; but so far they have not been effective. They have served no hostile purpose, moral or material.

"Yours faithfully,

"ARTHUR JAMES BALFOUR."

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

EXTENSION OF HOURS OF OPENING THE CLUB HOUSE.

On and after TUESDAY, SEPTEMBER 14th, 1915, the Club House will be open from 9 a.m. to 10.30 p.m., each day, INCLUDING SUNDAY.

Aviators' Certificates.

The following Aviators' Certificates have been granted:—

- 1630 Lieut. George Dudley Gardner (2/4 Yorkshire Regt.) (Maurice Farman Biplane, Military School, Birmingham). Aug. 7th, 1915.
- 1631 2nd Lieut. Robert Lawson Johnston, R.F.A. (Maurice Farman Biplane, Military School, Ruislip). Aug. 9th, 1915.
- 1632 Flight Sub-Lieut. George Shanks, R.N.A.S. (Caudron Biplane, Royal Naval Air Station, Eastbourne). Aug. 12th, 1915.
- 1633 Flight Sub-Lieut. John Anthony Carr, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Aug. 18th, 1915.
- 1634 Flight Sub-Lieut. Francis Neville Halsted, R.N.A.S. (Caudron Biplane, Royal Naval Flying School, Eastchurch). Aug. 20th, 1915.
- 1635 Andrew Lang (Maurice Farman Biplane, Military School, Brooklands). Aug. 22nd, 1915.
- 1636 Francis William Brett (Maurice Farman Biplane, Military School, Brooklands). Aug. 22nd, 1915.
- 1637 2nd Lieut. Eric Miller Pollard (West Yorkshire Regt.) (Maurice Farman Biplane, Military School, Farnborough). Aug. 23rd, 1915.
- 1638 Gerald Glen Samuel (Maurice Farman Biplane, Military School, Brooklands). Aug. 23rd, 1915.
- 1639 Sidney Edward Cowan (Maurice Farman Biplane, Military School, Brooklands). Aug. 23rd, 1915.
- 1640 Norman Perceval Roe (L. and P. Biplane, London and Provincial School, Hendon). Aug. 23rd, 1915.
- 1641 Flight Sub-Lieut. Sydney George Beare, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Aug. 24th, 1915.
- 1642 Lieut. Thomas Weston Peel Long Chaloner (Yorkshire Regt.) (Maurice Farman Biplane, Military School, Farnborough). Aug. 24th, 1915.
- 1643 Flight Sub-Lieut. John Douglas Hume, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Aug. 24th, 1915.
- 1644 Flight Sub-Lieut. Graham Smethurst, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Aug. 24th, 1915.
- 1645 Flight Sub-Lieut. Brian Charles Clayton, R.N.A.S. (Maurice Farman Biplane, Central Flying School, Upavon). Aug. 24th, 1915.
- 1646 Frederick Clive Avery Wright (Maurice Farman Biplane, Military School, Brooklands). Aug. 25th, 1915.
- 1647 2nd Lieut. Hubert Constantine Smith (21st Manchester Regt.) (Maurice Farman Biplane, Military School, Birmingham). Aug. 25th, 1915.
- 1648 Horatio Harle Bright (Beatty-Wright Biplane, Beatty School, Hendon). Aug. 26th, 1915.
- 1649 Flight Sub-Lieut. Frederick Esk Sandford, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Eastbourne). Aug. 5th, 1915.
- 1650 Edmund Daniell Spicer (Caudron Biplane, Beatty School, Hendon). Aug. 12th, 1915.
- 1651 2nd Lieut. William Robert Eric Harrison (Maurice Farman Biplane, Military School, Shoreham). Aug. 19th, 1915.
- 1652 Flight Sub-Lieut. James Stark Browne, R.N.A.S. (Caudron Biplane, Royal Naval Flying School, Eastchurch). Aug. 20th, 1915.
- 1653 Flight Sub-Lieut. William Croucher, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Eastbourne). Aug. 20th, 1915.
- 1654 Alan Goodfellow (Caudron Biplane, Beatty School, Hendon). Aug. 22nd, 1915.
- 1655 Capt. William Brierley Crossley (1/6 Lancashire Fusiliers), (Maurice Farman Biplane, Military School, Shoreham). Aug. 23rd, 1915.
- 1656 Lieut. William Ernest Grice Statter (The King's Own Regt.), (Maurice Farman Biplane, Military School, Farnborough). Aug. 24th, 1915.
- 1657 Algernon Boyesen (Caudron Biplane, Beatty School, Hendon). Aug. 24th, 1915.
- 1658 Clifford Squier Ross (L. and P. Biplane, London and Provincial School, Hendon). Aug. 25th, 1915.
- 1659 2nd Lieut. Morris Godfrey Philip Phillips (South Lancashire Regt.), (Caudron Biplane, Ruffy-Baumann School, Hendon). Aug. 25th, 1915.
- 1660 Douglas Derby Brooks (Maurice Farman Biplane, Military School, Brooklands). Aug. 26th, 1915.
- 1661 Charles Lax Willcox (L. and P. Biplane, London and Provincial School, Hendon). Aug. 27th, 1915.
- 1662 Herbert Augustus Johnston (Maurice Farman Biplane, Military School, Brooklands). Aug. 27th, 1915.
- 1663 Flight Sub-Lieut. Cecil Horace Brinsmead, R.N.A.S. (Maurice Farman Biplane, Royal Naval Flying School, Eastchurch). Aug. 27th, 1915.
- 1664 John Arthur Yonge (Hall Biplane, Hall School, Hendon). Aug. 27th, 1915.
- 1665 2nd Lieut. Robert Charles Lyon Holme (Somerset Light Infantry) (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Aug. 28th, 1915.
- 1666 Digby Crunden Cleaver (Maurice Farman Biplane, Military School, Brooklands). Aug. 28th, 1915.
- 1667 Flight Sub-Lieut. Leonard William Hodges, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Aug. 29th, 1915.
- 1668 William Gordon Pender (Maurice Farman Biplane, Military School, Brooklands). Aug. 30th, 1915.

THE FLYING SERVICES FUND administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

Total subscriptions received to August	£	s.	d.		£	s.	d.
25th, 1915 ...	9,487	19	9	T. Worrall ...	0	10	0
J. Henley ...	2	2	0	Y. Babajanides ...	0	6	6
Mrs. J. Henley ...	2	2	6	T. Struthers ...	1	1	6
J. Atwell ...	1	1	6	Collected by Miss			
Miss D. Ansell ...	0	2	0	Clarenschaw at the			
H. Adair ...	1	1	0	Queen's Hotel, Farn-			
S. Gordon ...	0	10	0	borough ...	11	0	0
H. Milliken ...	1	1	6	Total, September			
Mrs. H. Milliken ...	1	1	6	1st, 1915	9,509	19	9

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

The Roll of Honour.

THE following casualty in the Expeditionary Force has been reported from the General Headquarters:—

Under date August 24th:

Wounded.

Lieut. E. R. D. Nagel, Royal Field Artillery attached R.F.C.

SOME AMERICAN AERO ENGINES.

THE CURTISS.

CURTISS motors are manufactured in two types, vertical and V, and ranging in power from 60 h.p. to 200 h.p. At the lower end of the scale are the two early models, the 60 h.p. 6-cylinder vertical, bore 4 ins., stroke 5 ins., 1,200 r.p.m., weight 256 lbs., 5.28 lbs. per h.p.; and the 80 h.p. 8-cylinder V, cylinders set at 90°, bore, stroke and revs. per minute same as other model, weight 286 lbs., 4.74 lbs. per h.p. Both are water cooled, and have overhead valves operated by concentric pushrods

studs and four long through-bolts, the latter being secured at the top to a bridge or yoke fitting over the cylinder heads. The valves are located in the cylinder heads, and are operated by push rods and rocker arms from a single camshaft in the crankcase between the cylinders. The push rods operating the exhaust valves are within tubular push rods operating the inlet valves. The valves are of cast iron, with electro-welded steel stems. Valve guides and seats are cast integral with the cylinders,

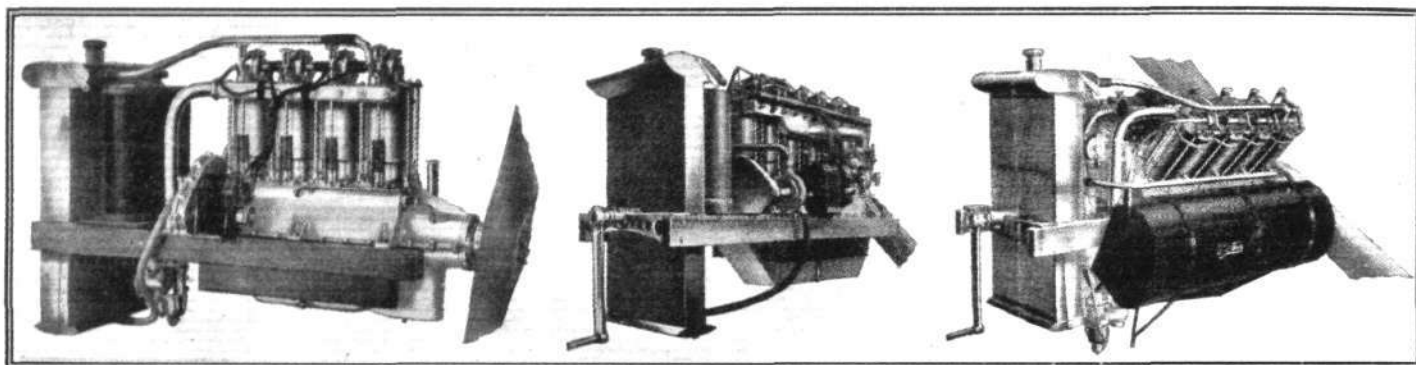


Fig. 1.—Three early-type Curtiss motors: left, 40 h.p. 4-cyl. vertical; centre, 60 h.p. 6-cyl. vertical; right, 80 h.p. 8-cyl. V (Gordon Bennett type).

(i.e., one tubular with the other one inside it) and rocker arms. The latest models, of which there are three, are the 90 h.p. "OX," the 100 h.p. "OXX," and the 160 h.p. "V," all 8-cylinder V-engines with cylinders set at 90°. The 90 h.p. has a bore of 4 ins. and a stroke of 5 ins., and develops 90 h.p. at 1,350 r.p.m., and about 100 h.p. at 1,500 r.p.m. It is only in getting off, or cases of emergency, however, that the engine is run at the latter speed,

and the combustion chamber is practically hemispherical. The water-jackets are made from a non-corrosive metal, a combination of nickel and copper, called "Monel." These jackets are welded to the cylinder walls by the Oxo-acetylene process, and the whole of the cylinder and jacket is nickel-plated. The cooling water is circulated by means of a centrifugal pump, mounted on an extension of the crankshaft projecting through the crankcase.

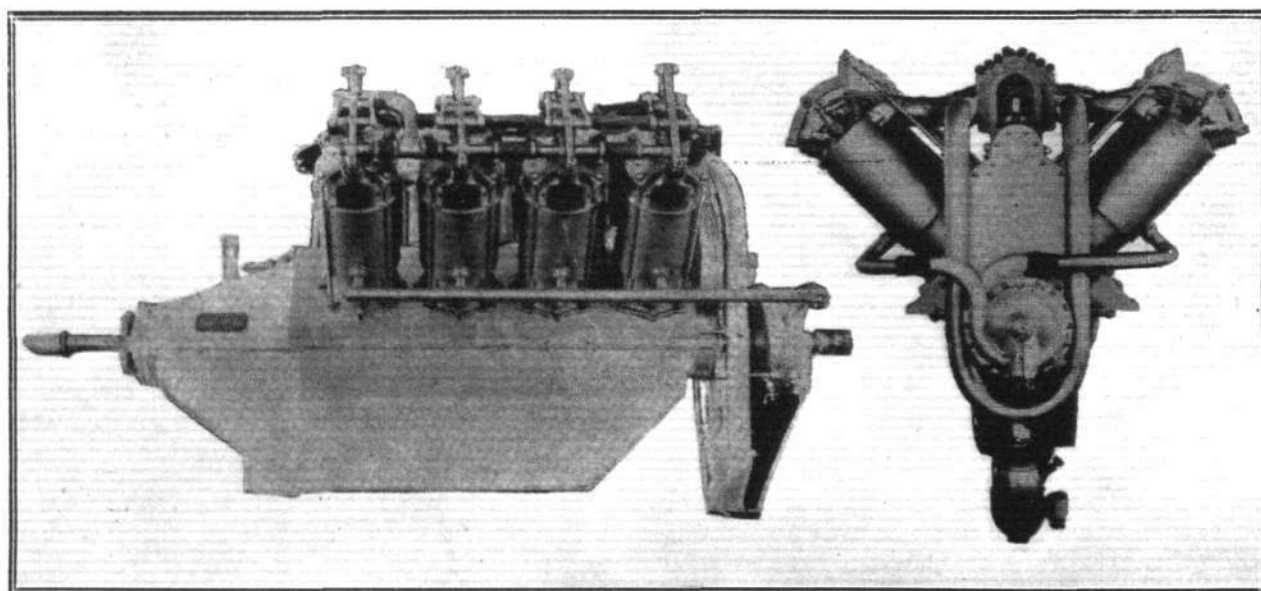


Fig. 2.—Side and end views of the 90 h.p. "OX" Curtiss motor.

the normal speed being 1,200 to 1,300 r.p.m. There is thus a fair reserve of power. The weight of engine, with magneto, carburettor, &c., is 330 lbs., and complete with radiator, water, &c., about 402 lbs. The weight per h.p. works out at 5 lbs.

The cylinders are cast-iron, cast separately, and are each attached to the aluminium crankcase by eight short

Lubrication is effected by means of a force pump driven by bevel gearing from a wheel formed integral with the crankshaft. The pump forces oil through the crankshaft to the five main bearings and the four crank-pin bearings, and through the camshaft to the latter's bearings. The lower half of the crankcase is divided into four compartments, which serve as an oil reservoir,

having a capacity for six hours' flight. The magneto is mounted between the cylinders, and is driven from the camshaft gearing. A Schebler carburettor is fitted.

The 100 h.p. "OXX" engine is much the same as the "OX" model, the only difference being in minor details and the bore of the cylinders, which is increased to $4\frac{1}{2}$ ins.

The 160 h.p. model "V" engine was originally designed for the Curtiss trans-Atlantic flying boat "America."

cylinder has two exhaust and two inlet valves, each of Tungsten steel $2\frac{1}{4}$ ins. diameter, with a lift of $\frac{7}{16}$ of an inch. The valves are operated from a single camshaft, as in the "OX" and "OXX" models. The intake manifolds are $2\frac{1}{2}$ ins. diameter, and together with the valve seatings are water-cooled. The exhaust valve stems

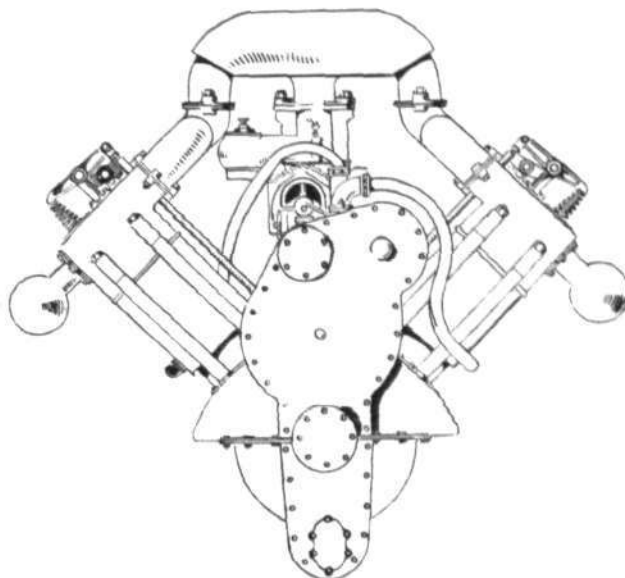
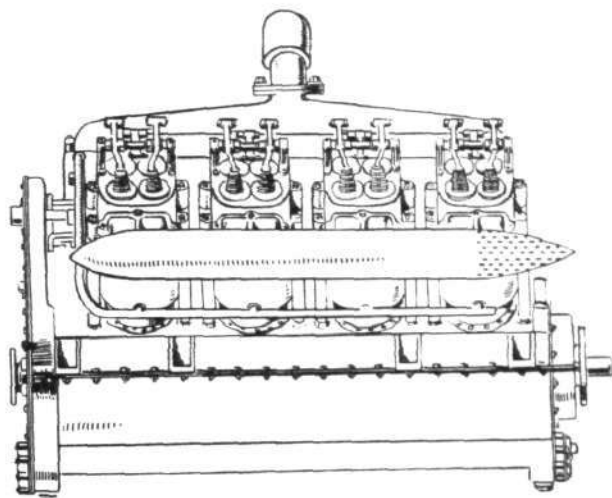


Fig. 3.—Side and end elevations of the 160 h.p. "V," "America" type, Curtiss motor.

Although on the same general lines as the "OX" and "OXX" models, this engine has one or two differences of some importance. As originally designed, the following are the characteristics of the engine. The bore and stroke are 5 and 7 ins. respectively, and the normal engine speed is 1,300 to 1,400 r.p.m., but at 1,500 r.p.m.

are also water-cooled for almost their entire length. Water circulation is by a large centrifugal pump with double outlets and a capacity of 40 gallons per minute. A Schebler carburettor is employed, which is mounted either between the cylinders, as shown in Fig. 3, or low down, as in Fig. 4.

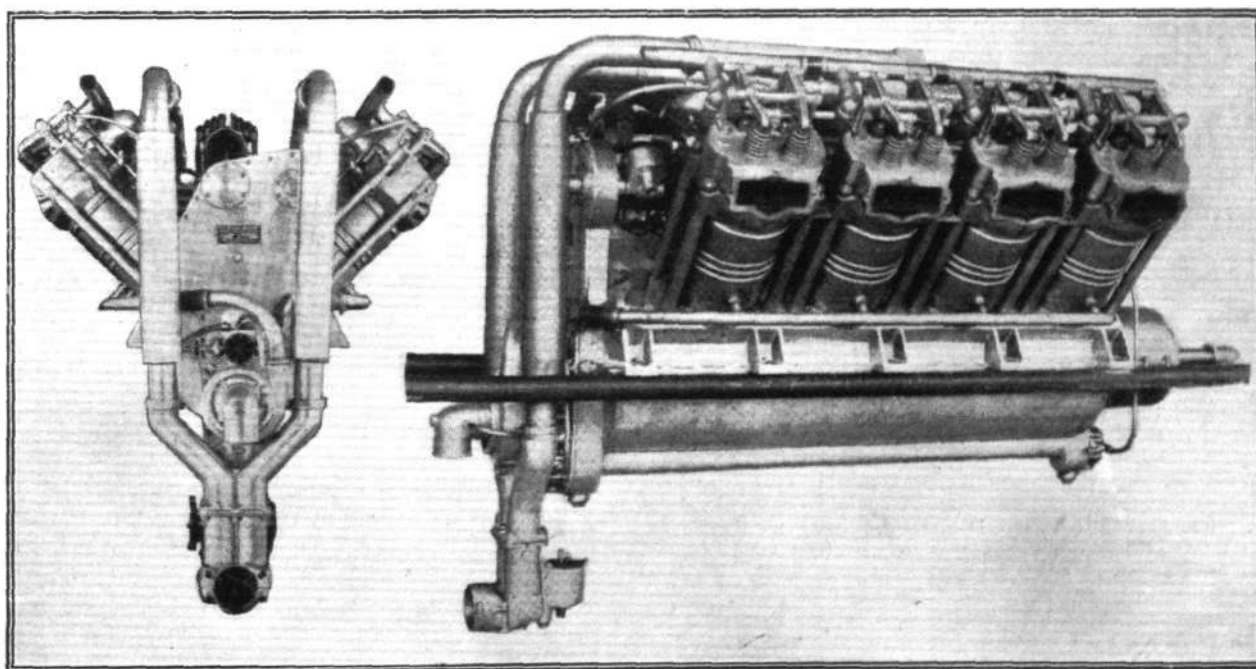


Fig. 4.—Side and end views of the 160 h.p. "V," "America" type, Curtiss motor.

200 h.p. is developed. The total weight of the engine is 753 lbs., bringing out the weight per h.p. to 5 lbs.

The cylinders are cast singly, with welded Monel water-jackets as in the other models, and are held down to the crankcase by tubular studs from the heads with extension through-bolts through main bearing caps. Each

The crankshaft is 4 ft. long and $2\frac{1}{4}$ ins. diameter, and the connecting rods are I-type forgings having large bearings and oil-ducts leading from the big-ends to the gudgeon pins. The crankcase is made up of two aluminium castings thoroughly bridged. Three rotary gear pumps are employed in the lubrication system. One, the largest,

forces oil under high pressure to every bearing through the crankshaft, connecting rods, and camshaft, whilst the two other pumps draw off the supply of oil from the crankcase—there being no splash system, the latter is thus kept drained. For ignition two magnetos are employed, driven off the camshaft gear, each cylinder having two spark plugs.

Several modifications have been made in the latest 160 h.p. model "V2" Curtiss engine. For instance, each cylinder has one inlet and one exhaust valve instead of two, and these are placed side by side in the head parallel

be seen from Fig. 5, that the method of holding down the cylinders on to the crankcase is also different. The long through-bolts are discarded, and instead each cylinder is bolted to the crankcase by twelve studs passing through a flange formed at the base of the cylinder. The cylinders, having a thickness of $\frac{1}{8}$ -in., are of nickel steel, whilst the pistons are of aluminium alloy. The cylinder heads are reinforced by a $\frac{1}{8}$ -in. plate above the head, leaving half an inch of water space in between. The plate is connected to the head by bosses, welded between them, which receive the spark plugs, valves, and rocker-

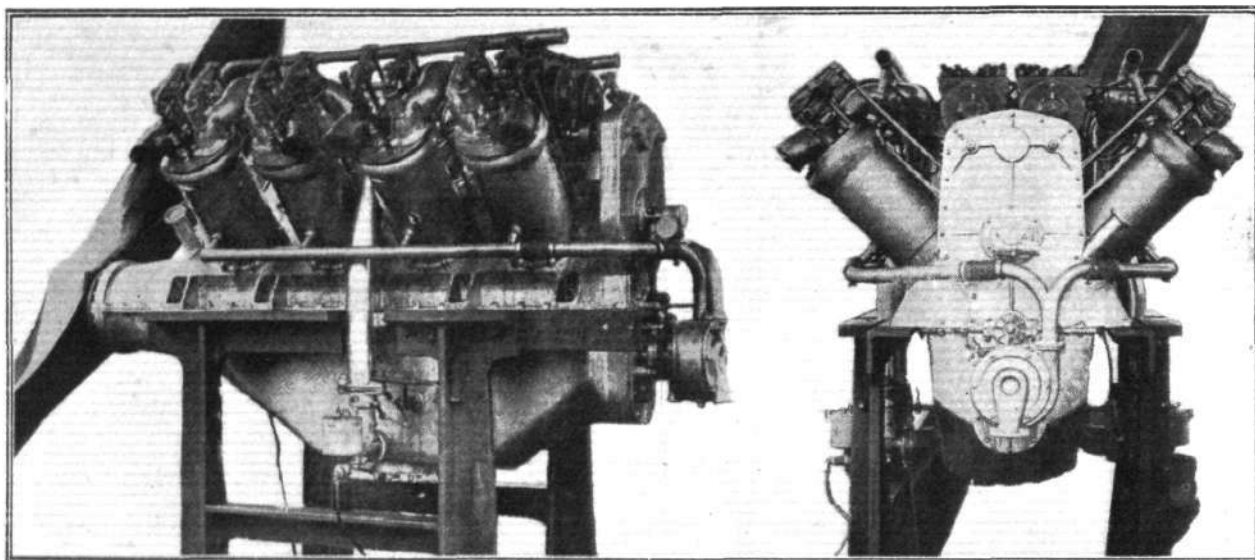


Fig. 5.—The latest 160 h.p., model V2, Curtiss motor, side and end views.

to the crankshaft so that all the valves are operated by rocker arms of the same size, and by a separate push-rod. Since it is intended that this new model V2 should run at no more than 1,300 r.p.m., it has been found that the single valves are ample for this speed. The usual helical springs are employed for the inlet valves, but for the exhaust valves springs as used on the Salmson engines, similar to the spring of a rat-trap, are fitted. This type of spring can be kept away from the heat of the exhaust pipe, and in consequence has a much longer life. It will



The Death of Capt. Mapplebeck.

It is with very great regret that we have to record the fatal accident to Capt. G. W. Mapplebeck, D.S.O., which occurred on the 24th ult. at Joyce Green, Dartford, when landing after a flight on a Morane monoplane.

Capt. Mapplebeck had a magnificent record of work at the front; he being one of the first officers of the R.F.C. to cross to France, where he rendered invaluable help during the retreat from Mons. At the end of September he successfully bombed a German ammunition train, but, during the operation, was severely wounded when at a height of 6,000 ft., and had to spend three months in hospital. His work was rewarded by the D.S.O. and being mentioned in dispatches. On being discharged from hospital, he returned to the front and on March 11th when engaged in a raid on the German lines near Lille, with two other pilots, he was shot down. After setting fire to his machine, he managed to hide in a wood and by skilful disguise managed ultimately to make his way across the Dutch frontier and so home to England. Shortly afterwards he again went out to the front being specially promoted flight commander and temporary captain.

Capt. Mapplebeck, who held a commission in the King's Liverpool Regiment, learnt to fly on a Deperdussin monoplane at Hendon in January, 1912, and was appointed to the 4th Squadron R.F.C. in December, 1913.

The remains of Capt. Mapplebeck were interred in Streatham Cemetery on Saturday last, the Royal Flying Corps supplying a full party under Capt. Cox. Among those present at the grave-side were Major-General Henderson, Lieut.-Col. Longcroft, Major Warner,

supports. The top of the water jacket is also brazed to this plate.

Each set of four cylinders is independent of the other, inasmuch as each has its own carburettor and magneto—although, of course, the throttles of the former are coupled up to one control lever. The weight of the engine, without radiator or water, is 565 lbs., and the total weight is 705 lbs., which is certainly an improvement, the weight per h.p. being now 4.4 lbs. In other respects this engine is similar to the other model.



Major Cogan, Capt. Penn Gaskell, Capt. Leighton and Lieut. Wynne.

Capt. Liddell, V.C., very ill.

It is announced that Capt. J. A. Liddell, who, as announced in last week's "FLIGHT," was recently awarded the Victoria Cross, is lying in a critical condition. His right leg, the bone of which was shattered by a German shell, has had to be amputated in order to save the officer's life.

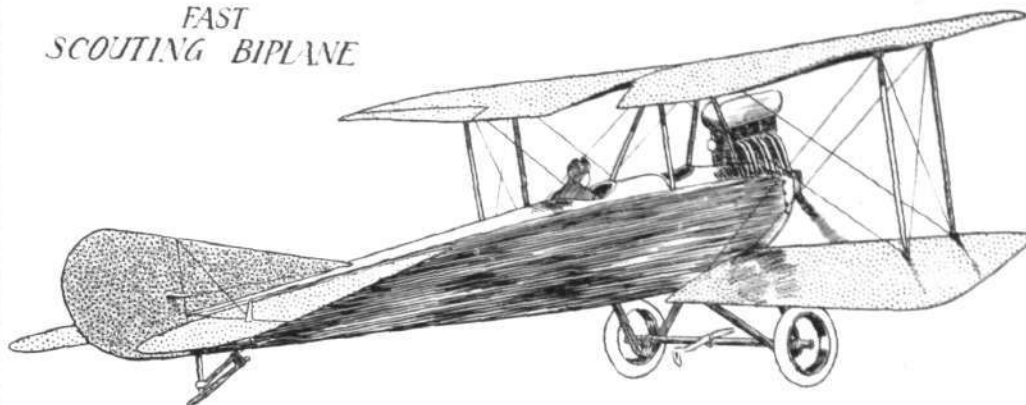
The Fatal Accident to Sub-Lieut. McLarty.

AN inquest was held at Haslar Hospital, Portsmouth, on the 26th inst. relative to the fatal accident to Flight Sub-Lieut. J. McLarty, two days previously at Calshot. Flight Sub-Lieut. Baumann, who saw the accident, expressed the opinion that the machine side-slipped when banking too steeply during a turn. In trying to pull the machine out of the subsequent dive too quickly McLarty, who was not strapped in, was thrown out of the machine into the water. He fell about 2,000 feet into shallow water, and was so badly injured that he died almost immediately; the machine was not much damaged. A verdict of accidental death was returned.

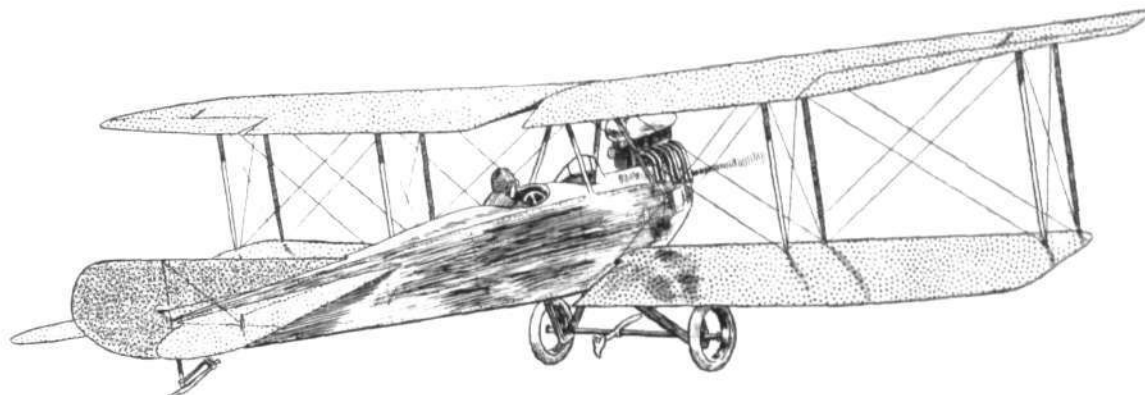
Escape of an Interned German Aviator.

It is announced that a German airman, who was a prisoner in the Frith Hill Compound at Frimley, has escaped. He is described as about 5 ft. 8 ins. in height, dark complexion, with black moustache, stockily built, and wearing a brown cord suit with dark cloth cap. This is the first escape reported from this camp, at which some thousands of prisoners have been confined.

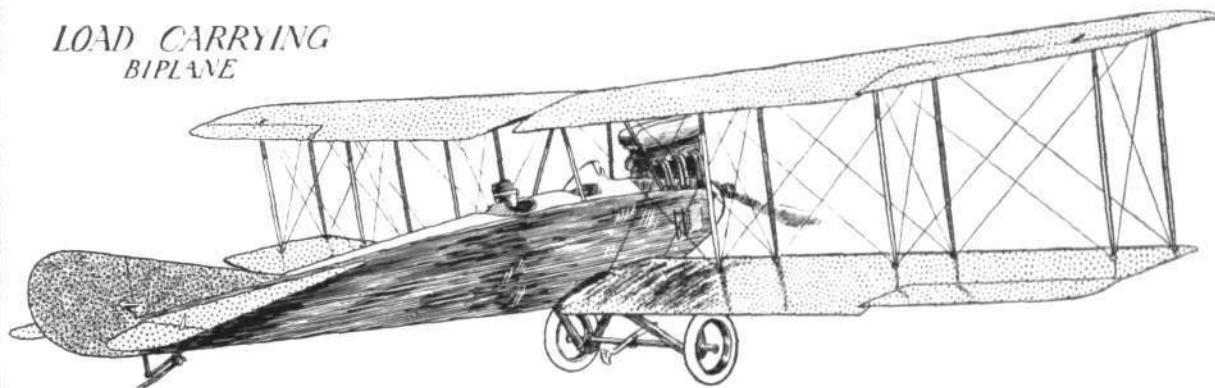
*FAST
SCOUTING BIPLANE*



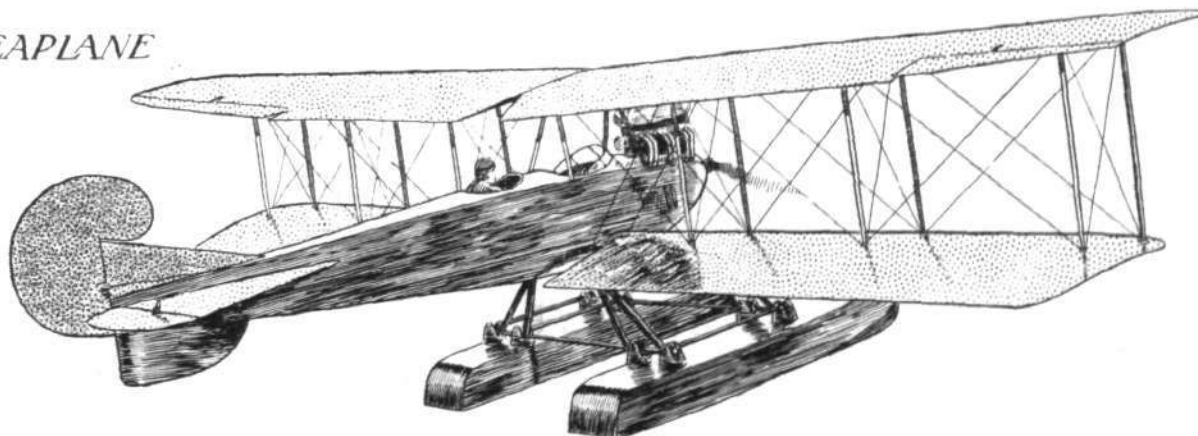
*FAST
2 SEATER
MILITARY
BIPLANE*



*LOAD CARRYING
BIPLANE*



SEAPLANE



ALBATROS

W. J. Fisher

FUSELAGE ECONOMY.—Four members of the Albatros family, all of which are fitted with the same size fuselage. In this manner three different types of land machines can be provided simply by substituting wings of various sizes, whilst the larger size machine is turned into a seaplane by fitting floats instead of the usual undercarriage,

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Last week's work: Straights with instructor: Probationary Flight Sub-Lieuts. Biscoe, Clifford, Corry, Cross, Davies, Gammon, Hadow, James, Man, Minifie, Sadler and Till. Straights alone: Minifie, Till, Roach Pierson and Hodges. Circuits and eights with instructor: Clifford, Ford, Penley and Roach Pierson. Circuits and eights alone: Beare, Hume, Hodges and Smethurst.

Brevets during week: Probationary Flight Sub-Lieuts. Beare, Hodges, Hume and Smethurst.

Instructors: Messrs. Manton, Russell and Winter.

12 *brevets* have been taken during the month of August.

Beatty School.—The following pupils were out during last week:—With instructors on Beatty-Wright machines: Messrs. Arbon (15 mins.), Bond (60), Boyle (15), FitzHerbert (50), Greenhill (15), T. Jones (55), King (25), Litton (25), Morgan (25), Nash (3), Onley (15), Ross (70), Sampson (35), Smith (30), Theo (25), Thompson (10), Tolhurst (24), Willmetts (12), Hoskier (15), Claxton (10).

On Caudron machines: Messrs. Broadbent (15 mins.), Cadogan (60), Coates (30), Collett (30), Davison (50), Fawcett (20), Hoskins (25), L. F. Jones (40), Kirkwood (35), Middleton (25), Moxon (15), Nicholson (40), Overton (15), Stagg (25), Tremlett (15), Whincup (10), Campbell (55), Thomas (105), Summers (10), Mellings (25), Bowick (20), Begg (5), Collier (35), Grant-Suttis (40),

Richard (30), Byrne (55), Cumming (20), Brown (30), Lashmar (35), Symington (30), Cowper (20), Rimington (15).

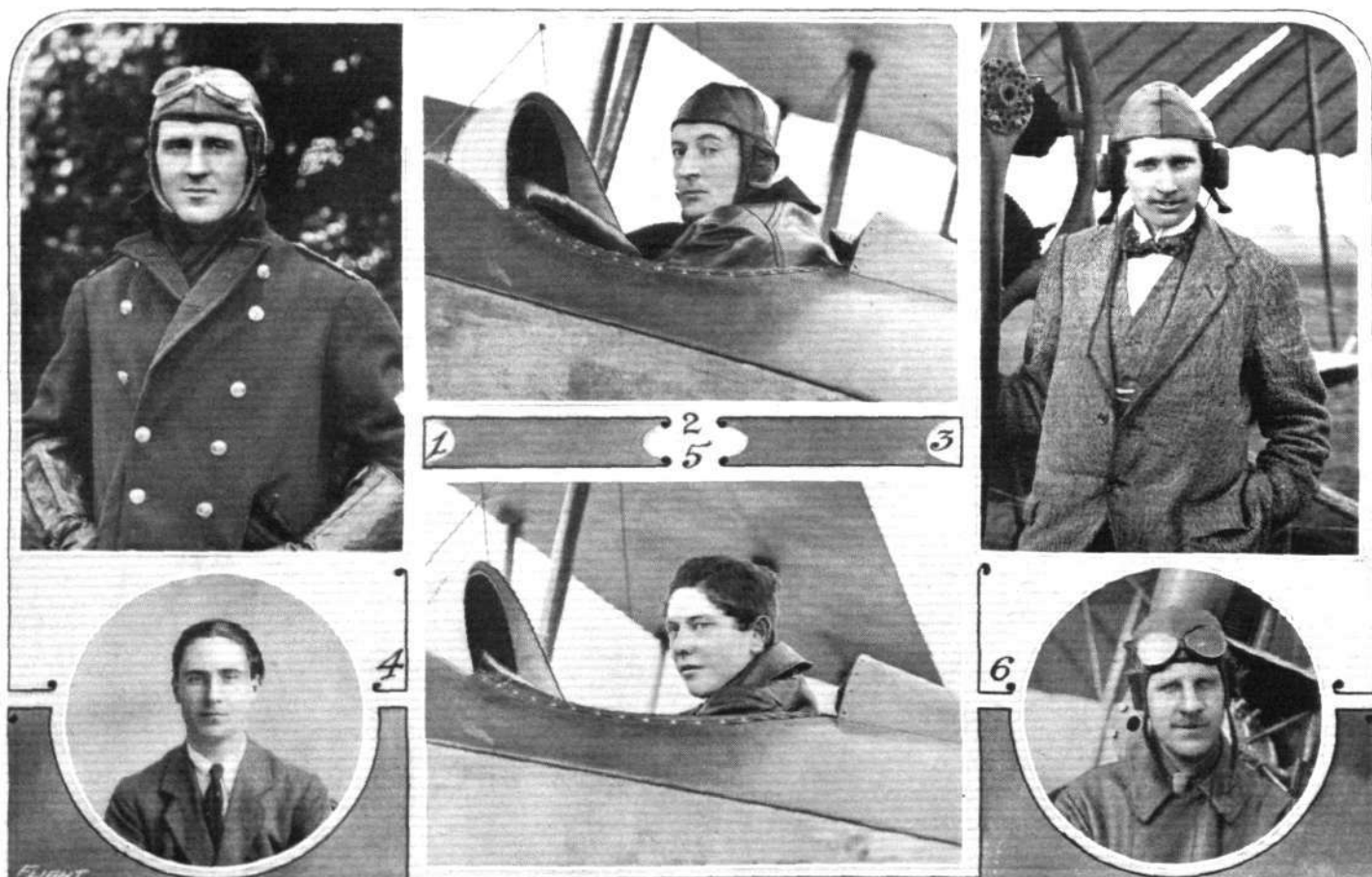
Mr. Algernon Boyesen flew for his certificate, both flights and landings being exceptionally good.

The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, C. B. Prodger, R. Kenworthy, and A. E. Mitchell, the machines in use being Beatty-Wright dual-control and single-seater propeller biplanes and Caudron tractors.

Mr. G. K. Blandy continued extra practice.

Exhibition flights were given on Thursday by Messrs. Beatty, Roche-Kelly and Kenworthy, on Saturday by Messrs. Beatty, Roche-Kelly, Prodger and Kenworthy, and on Sunday by Mr. Roche-Kelly.

Hall School.—The pupils at the Hall School last week put in a very good week's practice, and J. A. Yonge took a very good ticket with well-banked turns, climbing during the tests to no less than 2,700 ft., a good performance for a pupil. The following pupils are showing especial promise, and are nearly ready for qualification: Messrs. Huggan, Hatchman and Russell. With Instructor Stevens: Messrs. Huggan (44 mins.), Russell (58), Hatchman (49) and Yonge, all practising circuits, figures of eight and *vol plané* landings. With Instructors C. M. Hill and C. Bell: Messrs. Wenner (52 mins.), Scott (7), Wilkins (42), Broad (37), Bond (30), Butterworth (24), Arnsby (12), Mason (11), Cook (10), Watson (50), Bayley (32),



Some pilots who have secured the Royal Aero Club *brevet* at various flying grounds.—1. Flight Sub-Lieut. W. L. Graham, Chingford Aerodrome. 2. Flight Sub-Lieut. C. C. Willie, R.N.A.S., Chingford Aerodrome. 3. Mr. Herbert Sykes, Ruffey-Baumann School, Hendon. 4. Mr. S. J. Sibley, The Seaplane School, Windermere. 5. Flight Sub-Lieut. H. C. Vereker, R.N.A.S., Chingford Aerodrome. 6. Capt. J. Everidge, L. and P. School, Hendon.

Nos. 1, 2, 3, 5, 6, are from the F.N.B. Copyright Series of Aviators.

Lieut. Dalley (18), Brandon (36), Hamer (24), Stirling (32), Drew (50), Hall (39), Sepulchre (30), Ackroyd (8) and Bangs (12).

Machines in use: Hall tractor biplanes.

London and Provincial Aviation Co.—Pupils doing straights last week: Messrs. Renton, Franklin, Grimwade, Jamieson, Woolley, Rogers, Hordern, and Rochford. Circuits: Messrs. May and Willcox. Circuits and eights: Messrs. Ross, Roe, and Moynihan.

Certificates taken: Messrs. Norman Roe, Clifford Ross, and C. L. Willcox all took their *brevets* this week, making good steady flights.

Instructors: Messrs. M. G. Smiles, W. T. Warren, J. H. James, G. Irwing, and C. M. Jacques.

Ruffy-Baumann School.—Lieut. M. G. Phillips has passed his certificate tests after only nine days' instruction, during which time he was in the air four and a half hours. His performance was a splendid one in all respects. Capt. Crawford has returned to the school to recontinue his tuition.

The pupils have been instructed as follows:—Young (40 mins.), Belton (26), Ovens (20), Bailey (18), Capt. Crawford (16), Liddell (15), Muspratt (50), Gallop (18), Sherwood (40), Griffith (29), Rees (27), Stewart (49), Prothero (20), Hughes (15).

By some unfortunate oversight the fact that Mr. T. C. Wilson passed his certificate tests was not mentioned last week, hence this explanatory statement.

A 60 h.p. Gnome has been taken down, and students have been given many opportunities of studying this engine internally.

Instructors: Edouard Baumann, Felix Ruffy, Clarence Winchester and Ami Baumann.

Machines: 60 h.p. and 50 h.p. R.-B. Caudron biplanes.

Midland Flying School, Birmingham.

MR. S. SUMMERFIELD, the instructor, was very busy last week with his many pupils, several of whom showed sufficient confidence in taking the controls for this to be granted to them towards the end of the week. The names of the pupils who have been on straights and rolling are:—L. Monfee, J. Tzesing, C. Chang, J. Munhon, C. Chong, W. Watson, K. M. Chan, Y. Liu, C. Kayfong, K. Jokping and C. Morley, the latter joining the school during the week; after several straights with the instructor he was able to take charge, making a success of his first ventures. Mr. S. Summerfield had the assistance of Mr. Jung, a pilot passed at Hendon, whose services were greatly appreciated.



FLYING AT HENDON.

As usual, M. Osipenko started the ball rolling, or rather the aeroplanes flying, last Saturday afternoon on the 50 h.p. G.-W. school 'bus. Marcus D. Manton followed shortly after with two trips with passengers on the G.-W. school 'bus, and then J. S. B. Winter made the third representative of the G.-W. school to take the air. W. Roche-Kelly next came out on the 50 h.p. (Gnome) Beatty-Wright and put up some banking. Manton went up again on the G.-W. school 'bus, and then another pilot got to work. This was E. Baumann on the 60 h.p. Ruffy-Baumann biplane. After a solo flight he took up a passenger, Winter also taking a passenger on the 50 h.p. G.-W. school 'bus the meanwhile. Osipenko then brought out the 100 h.p. G.-W. five-seater 'bus, and made a flight with three passengers. He made two other flights with



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

General Lewis Hall, C.B., who has just taken his Royal Aero Club ticket at the London and Provincial School, Hendon, on an L. and P. biplane. General Hall, whose age is 62, most certainly is an instance contradicting the generally accepted theory that flying is a young man's game.

Northern Aircraft Co., Ltd.

The Seaplane School, Windermere.—Flying Monday, Wednesday, Thursday, Friday and Sunday last week with instructor: Amphlett (39 mins.), Benson (40), Coats (21), Ingham (21), Inglis (14), Latch (15), Leigh (19), Lawton (12), Robertson (32), Robinson (13), Shaw (52). With instructor in passenger's seat: Barber (30 mins.), Lawton (10), Macintyre (15), Reid (24), Ridgway (26), Robertson (18). Figures of eight or circuits: Laidler (21), Macaskie (44).

Machines: N.A.C. propeller biplane, 50 Gnome; N.A.C. propeller monoplane, 80 Gnome.

Several passengers carried and test flights.



passengers immediately after, and Baumann also ascended again. Six machines were then seen in the air together, viz., R. Kenworthy on a 60 h.p. Beatty-Wright, Roche-Kelly on a 50 h.p. Beatty-Wright, E. Baumann and G. Virgilio on 60 h.p. and 50 h.p. Ruffy-Baumann biplanes respectively, G. Irwing on a 45 h.p. L. and P. biplane and Osipenko on the five-seater. All the previously-mentioned pilots and machines made other flights from time to time, and the only other pilot to come out before school work started was G. W. Beatty, who flew the 45 h.p. Beatty-Caudron.

In spite of the inclement weather on Sunday, Osipenko managed to keep the 'bus flying, and Roche-Kelly kept the banks going. Otherwise, there was "nothing doing."

EDDIES.

FROM the land of superlatives comes a report of a feat performed by the well-known American pilot, Art Smith, who, it seems, has got "fed up" with looping the loop several times in succession at night, and by way of a change has devised and carried out a new form of aerial acrobatics. This latest stunt of his, rumour has it, consists in tracing his name in the sky in old English script so plainly that the blue smoke pencilling was visible for a good many seconds afterwards. Umph! Seems that Art Smith believes in art for art's sake. For "Art's" sake it is to be hoped the paying public will do ditto.

x x x

If the report of the *San Francisco Chronicle* can be trusted, the same pilot, of artistic achievements, evidently has a liking for beautiful sunsets, as well as for Old English script, for that journal states that recently he has flown so high over the town of earthquakes that he saw a sunset at 9 p.m. Unfortunately for the *Chronicle* reporter, a local astronomer seems to have objected to a mere pilot meddling with *his* sunsets, and has worked out that "at nine p.m. Pacific standard time on that day, the sun would have been in the Zenith of the place whose latitude is $22^{\circ} 14' N.$, longitude $105^{\circ} E.$ It would have been on the horizon for all observers on the dividing great circle of a hemisphere whose pole is located at the place just named. It is easy to show that the nearest point on this great circle from San Francisco is located at a distance of 1,050 miles in a north-westerly direction; i.e., for an observer above San Francisco to have seen the sun on his horizon at that time of night, he must have been far enough above the earth for his horizon to have been extended to the distance named. A simple calculation determines this height to be 154 miles." Well, I don't pretend to be

able to follow the astronomer in his calculations, but I suppose one must take his word for it, and it would seem that Morris on his Curtiss will be up against an even tougher proposition than the German pilots when he goes for altitude honours.

x x x

It seems that I was a little previous in my rejoicings last week, with regard to Gilbert having once more obtained his freedom and made good his escape without the necessity of breaking his word of honour. Gilbert, it appears, had posted a letter to the Swiss authorities withdrawing his parole, but whether the usual network of official red tape prevented the letter from reaching its destination within a reasonable time, or whether Gilbert in his anxiety to put foot once more on his native soil, did not make sufficient allowance for the regular grooves of officialdom the world over, is a matter which has to be decided by officialdom. At any rate the fateful letter, it appears, had not been received and notified at the time when he started his escape, and therefore, in the eyes of international martial law, Gilbert broke his parole, however unintentionally, and there was but one course open to the French Government, that of sending him back to Switzerland. One cannot but feel sorry for the dashing French pilot, and it is to be presumed that in the future the Swiss authorities will take particular care that he does not inadvertently violate his parole a second time. However, I suppose "it might ha' been waur."

x x x

From Athens comes the report that Rear-Admiral Mark Kerr, who, it may be remembered, was lent to the Greek Government as Vice-Admiral commanding the Hellenic Navy two years ago, is returning to England. Admiral Kerr, who, besides being a distinguished officer, is the author of several poems and essays, learned to fly under the tuition of the late Capitaine de Freigate Collins P. Pizey, during his stay in Greece. The time taken by Admiral Kerr in obtaining his *brevet* was, if my memory serves me rightly, 88 mins. in the air, of which I think 56 mins. were spent working the dual controls of the Sopwith biplane, the remaining 32 mins. being divided up between three solo flights.

x x x

Truly this is an age of strange happenings, on land as well as on the sea and in the air, made even more wonderful by the way in which these happenings are at times reported. For instance, looking through an evening paper recently, my eye was attracted by an agency message headed "Albatrosses Fight Aeroplane." The report set forth that "a Russian aeroplane was attacked by three German albatrosses, one of which was brought down by machine gun fire, whilst the other two fled." Had the writer of the headline taken the trouble to grasp the message, common sense must have prevailed and told him that the birds, after which the well-known German machines are named, have not yet been successfully nationalised or "militarised"—even by the German martinets.

x x x

I have always up to now been a staunch believer in carrying a very complete outfit of instruments on an aeroplane. To a pilot who is used to the particular machine he is flying, these are not perhaps so essential, as he will be able to tell by the "feel" of the machine whether everything is going well. If, however, the



Flight-Lieut. Edmonds, who is reported to have sunk a transport in the Dardanelles by dropping a heavy bomb from his aeroplane upon the deck of the vessel on August 12th.

mount is a strange one to him and he is out for real business, the instruments become an absolute necessity. These are the premises on which I have been wont to argue the question of instruments on all machines. But, needless to say, a pretty clear speaking acquaintance with the various instruments is more than a useful knowledge to acquire. This is brought to mind by an instance that is said to have happened recently at one of the aerodromes. A pupil was out for a solo flight, and started off quite well, busily watching all his "gadgets" while climbing in a wide circle. After a few minutes he looked at his altimeter, and found its hand showing 1,800. He was just getting ready to let go of the controls with one hand, in order to slap himself on the back for having got the old 'bus to break the climbing record of the world, when he crashed into a tree. What, at 1,800 feet? I hear someone say. Well, that, I am told, is exactly what the pilot said to himself before he struck the ground. You see, it's like this. His 'bus was very well equipped with instruments, and in the profusion of dials he mistook the revolution counter for the altimeter. Quite a pardonable mistake for a beginner perhaps, but one which cost the country a good deal for repairs.

x x x

Among the visitors to Hendon last week was Flight Sergt. R. J. Lillywhite, who has been home on a few days' leave after nearly a year's service in Egypt, where he has been doing a considerable amount of air scouting. I was not fortunate enough to see Lillywhite up there myself, but am told that he looks very fit and is in the best of spirits. Which is as it should be, as one could

hardly picture Lillywhite being anything else, unless a year's active service had wrought very great changes in him.

x x x

Already a number of our colonies have given their contribution towards the expansion of our air services, either by gifts of money for buying machines, or indirectly, but none the less effectively, by sending us numbers of their young men, who, in many cases, have turned out first-class pilots. New Zealand, Australia and Canada have already contributed handsomely in the manner indicated, and it now looks as if South Africa is about to add her share to the furtherance of British aviation. In this connection, a young South African, Mr. H. D'Olley Beningfield, of Durban, who has for some time past been engaged on the design of a new type of aeroplane, is at present in England in order to complete his designs. When this is accomplished, the construction will, I am told, be commenced, and it is hoped that if success attends this first effort of Mr. Beningfield and the syndicate he represents, he will receive some encouragement from his Government in a tangible form, so as to enable him to establish on a sound footing a South African aeroplane industry. Although the proposed machine has at present only reached the blue print stage, and it is consequently impossible to predict with any degree of accuracy what will be its behaviour, it is as a type quite up to date, being of generous proportions, and designed for two engines, placed on the wings a short distance out from the body. One wishes Mr. Beningfield every success with his undertaking, and hopes that the new machine



At the funeral of the late Captain Gilbert Mapplebeck, D.S.O., of the Royal Flying Corps, at Streatham Cemetery on Saturday. The firing party at the graveside.

may prove a valuable step in the development of the type that is some day going to beat the Germans.

A propos multiple engines, the form of transmission gear employed in the Benningfield aeroplane is the product of his co-worker, Mr. Henry Walker, M.E., F.C.S., who has his location High Holborn way. This gear consists essentially of short chain drives from each engine to its propeller, incorporating free wheel clutches, and an endless chain connecting the two propeller-shafts, so that if one engine is disabled, the other will continue to drive the two propellers. Although it was designed specially for the Benningfield machine, Mr. Walker considers it thoroughly suitable for other types of aeroplanes or dirigibles, and will be only too pleased to go into details with anybody directly interested.

A visit to Hendon recently revealed the fact that Flight Lieut. N. Pemberton Billing, in spite of his great amount of good work in the R.N.A.S., has found time, with his usual phenomenal energy and

apparently unlimited capacity for work, to produce a new and somewhat startling aeroplane. The time is hardly opportune to go into details of the new plane, but as it has already made good in its initial performances, it looks as if P. B. should get good reward for his originality, especially as he deserves well of his country in more ways than for the designing of a warplane.

The time was when flying was supposed to be an accomplishment attainable only by men in the prime of youth, and it has been frequently maintained that a man was far too old to fly when he was 40. We have already had splendid examples to the contrary, if we only name by way of example Major-General Henderson, who long since took honours in air work, and the late Col. S. F. Cody, whilst recently another proof of the fallacy of the old doctrine has been added by Brigadier-General Hall, C.B., who, although being well over 60 years of age, has just obtained his *brevet* at the L. and P. School at Hendon. And a very good "ticket," too, I am told.

"ÆOLUS."

AIRCRAFT AND THE WAR.

A CENTRAL NEWS message from Athens on the 24th ult. stated:—

"A number of Russian aeroplanes flew over the Asiatic suburbs of Constantinople yesterday, and dropped a number of bombs. Thirty Turks, eight Greeks, and three Armenians were killed or wounded. The population of the Turkish capital is in a state of panic."

In a Reuter message from Petrograd on Saturday regarding the German attack on Ossowiecz, it was stated:—

"In the latter stages of the siege the use of aeroplanes was discontinued, the Germans having received too many reminders of the accuracy of Russian gunnery."

The special correspondent of the *Daily Chronicle* in Paris, writing on 29th August, said:—

"Details of the raid of 60 Allied warplanes on the Forest of Houthulst have reached me. Amongst the three great air raids undertaken by the Allies at the end of this month the most interesting is without doubt the one which was so successfully accomplished by the 60 Allied warplanes on August 25, when the British, French, and Belgian machines dropped a shower of explosives on the Germans in the Forest of Houthulst in Belgium. The result obtained from the military standpoint was excellent."

"The fact that not a civilian was in the whole forest was a strong point in favour of the bombardment, and on August 25, towards 10 p.m., the Allied aviators started on the great adventure."

"It was an admirable moonlight night, and signs of anxiety were noticed in the German lines when the war planes were seen approaching their front on Houthulst. Immediately the electricity was extinguished, and the Germans began to make use of their anti-aircraft guns, of which they have numerous batteries all along the line, but they had counted without the blinding brightness of the moon, which rendered the shafts of light from their searchlights absolutely useless in the silver grey light in which the Allied aeroplanes were almost invisible. The enormous number of shells fired by the Germans were ineffectual. There was no casualty to lament."

"About four tons of incendiary bombs and explosives were thrown during the entire course of the raid on the enemy barracks and depots. A large number of the warplanes made as many as three successful journeys to get fresh supplies of bombs. The thunder of the enemy's guns vied with the bursting of the explosives, so that pandemonium seemed let loose. The bombs employed were on an average 4.7 and 6-inch."

"The Allies have now incendiary bombs of extraordinary power, and from which a flame goes, on the moment of explosion, nearly 50 metres high, and which illuminates the surrounding country like a gigantic Bengal light. By the light of the fires which had broken out, and which showed up the surroundings, the Allies were able to perceive compact bodies of soldiers retreating into further parts of the wood into safety."

"Although so far the extent of the damage is not accurately known, yet nevertheless it is certain that several munition depots exploded, and that a panic ensued."

"All who are interested in the gallant little Belgian Army will learn with interest that some of the aviators who took part in the raid belong to the Belgian Aviation Corps, which is now admirably organised."

"This raid by 60 warplanes is but one of the most important of many large raids which are being accomplished daily on this part of the Flanders front. Thus, on the evening of the 24th, 15 aeroplanes bombarded other German military depots, also situated in the neighbourhood of the same forest."

"Our aeroplanes have definitely secured the mastery of the air, and harass the enemy ceaselessly."

Mr. G. Valentine Williams, writing to the *Daily Mail* from the British Headquarters on Sunday, said:—

"German airmen scattered red and yellow leaflets with details of the fall of Kovno behind our lines in the Hill 60 region yesterday. The red leaflets were printed in English, the yellow in French."

A Central News correspondent in Northern France, writing on Sunday, said:—

"Friday's bombardment of the military works at Ostend, Middlekerke, and Bruges by Anglo-Belgian aviators caused immense damage and killed a large number of German soldiers."

The following message was sent by Reuter's correspondent at Petrograd on Monday:—

"To the north of Vlodava (thirty miles south of Brest Litovsk) a Russian aeroplane was attacked by three German Albatroses, one of which was brought down by the machine-gun fire, while the other two fled."

The following details regarding last week's air raid on Ghent appeared in Monday's *Telegraaf*:—

"On Thursday night several aeroplanes appeared above the aerodrome of Saint Denis, near Ghent. At Ghent wild gunfiring and the explosion of bombs was audible. Shortly afterwards the glare of fire was visible from the town, apparently coming from burning aeroplane sheds."

The *Morning Post* correspondent at Amsterdam, writing on 30th August, said:—

"Early on Saturday morning an Allied aviator dropped several bombs on Ghent, a large shed being completely destroyed."

According to the Central News correspondent in Paris:—

"On Friday morning last four French aeroplanes flew over Mülheim, dropping bombs on the railway station and the electric transforming stations between the station and the town. The airmen also flew over Fribourg, and threw bombs in the vicinity of Sarrebourg."

Models

ALL communications in connection with this section should be addressed to the Model Editor, "FLIGHT," 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

The Loading &c., of Models.

IN some notes regarding the work of the Windsor Model Aero Club which have been sent by Mr. F. J. Cann, there are the following which will doubtless prove helpful to some other readers of this section:—

"From a *résumé* of the majority of duration machines constructed by members, I find that a loading of four ounces per square foot has given by far the best results. Indeed, models which were loaded under this margin have revealed a point which has manifested itself on several occasions latterly to the writer; it is that models loaded at 3 ounces per square foot have not given such good results as those loaded at 4 ounces. The former have without exception given much trouble in the adjustment of the centre of pressure, and requiring weather conditions as nearly as possible ideal.

"A biplane is altogether a more interesting model to build, for it presents interesting constructional problems, which are lacking in the majority of monoplanes, while however simple may be its construction it certainly evades the term 'flying stick.' Quite apart from this, however, there is the increased amount of theoretical problems entailed, such as the correct position for the centre of thrust, thus requiring a deeper study of those laws which need to be only partly known to fly an A frame. Most of the members of this club have found that the centre of thrust placed slightly above the centre of greatest resistance has given best results with biplanes, while an overhang on the top plane effects good lateral stability. A camber of one-twelfth the chord has been found to be ample for models up to twelve ounces.

"In many of the early tractors constructed by members, the rubber (*i.e.* the centre of thrust) was placed underneath the spar, but difficulty of adjusting the centre of pressure with the thrust low was experienced, so that it was ultimately placed above the motor rod. A much lower ratio of areas was employed than with canards, indeed I think this an essential for longitudinal stability. From experiments conducted by the members, the most effective position of the rudder was above the thrust line, much better stability and directional control being manifest than with its area equally disposed about the model's centre line of thrust. No angle of incidence was used, or found necessary, on the main surfaces of their tractor machines, the longitudinal vee for stabilising purposes being maintained by a negative angle of 3° approx. on the tail. Better flying qualities have also resulted from models having a Morane wing plan.



AFFILIATED MODEL CLUBS DIARY AND REPORTS.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Sheffield Ae.C. (41, CONISTON ROAD, ABBEYDALE, SHEFFIELD).

Monthly Report.—It is with deep regret the club has to announce the death on June 28th of Lieut. E. W. Colver (president of the club), who was killed in action in the Dardanelles. He was attached to the West Riding Divisional Engineers, and had a most promising career before him. He was deeply interested in aeronautical science, and took keen interest in the latest designs of aircraft and engines. He also supported the science by giving many valuable prizes for encouraging further developments in aviation. A note of condolence was sent to Mr. and Mrs. R. Colver, on behalf of the members, by the secretary, expressing their deep sympathy in the great loss. Mr. Colver was appreciated by all those whom he came in contact with. July 22nd, general meeting of the club at Broomheads, Mr. W. H. Bagshaw, jun., presiding. Mr. E. S. Elliott was elected as official observer to the club, to fill the vacancy through the death of Lieut. E. W. Colver. It was decided to do away with the junior section subscription, all members to pay 6d. per month each. It was also decided that all competitions be held over until the end of hostilities, but any member wishing to raise the club records could do so by giving seven days' clear notice to the secretary, when notification could be given to the observers. It was resolved that a bronze medal or 3s. 6d. in cash be given the member accomplishing a new record, by way of encouragement.

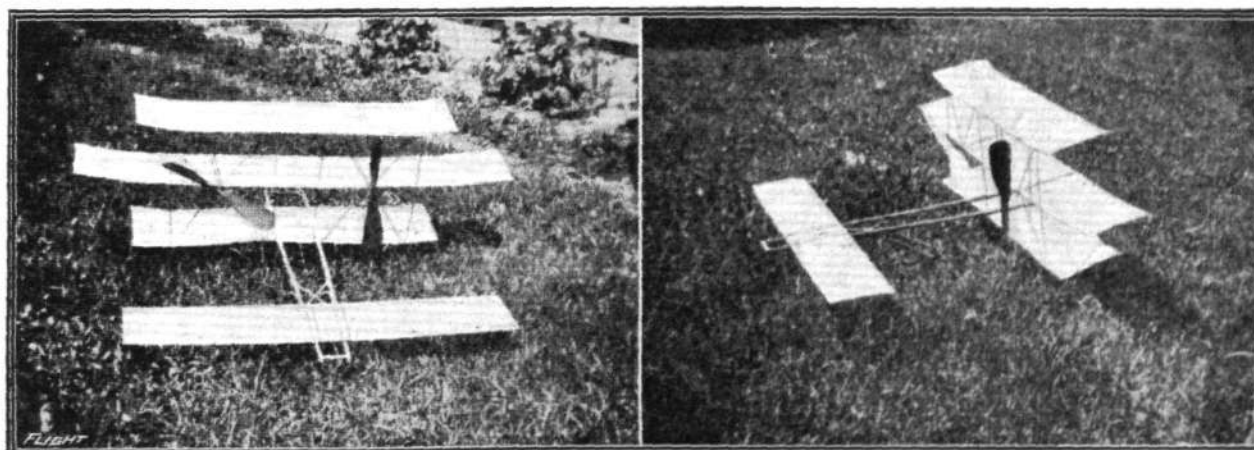
South-Western Aero Club (373, Brixton Road, S.W.).

Monthly Report.—There was not a great deal of flying last month, but what there was, was of an excellent quality. Messrs. Howse and Reid turned out with their tractors practically every Saturday, both obtaining durations of 30-40 secs. Several good photographs of each model in flight were obtained. A great deal of indoor work has been done, and Mr. Reid is experimenting with various methods for transmitting power from the centre of an elastic motor to two propellers running parallel to it; but no definite result has been attained yet. If, however, results are sufficiently good, and prove better than ordinary methods of gears or chains, it should be a fairly simple affair to apply it to a twin-pusher with the propellers immediately behind the main surface, and the tail plane behind the propellers. Mr. Howse hopes to have out a twin-pusher monoplane very soon.

UNAFFILIATED CLUBS.

Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).

Monthly Report.—Aug. 2nd (Bank Holiday) proved fitful weather, but nevertheless there was a good attendance, the chief work being by T. W. Bennett and G. H. Kilshaw, the former doing some brilliant arrow-plane flying, about the minute duration, in addition putting forth a very good show with a new r.o.g. hollow streamline spar mono. G. H. Kilshaw found plenty of work on a new back-curved r.o.g. single tractor, which showed exceedingly good stability for a single. The presence of J. A. Connolly, at present serving in one of the anti-aircraft sections, was appreciated. 14th, the best performances of the day were made by the Bennett biplane r.o.g. canard, and the back-curved tractor of G. H. Kilshaw. 19th, the second mid-week meeting held this season proved very good, the best times being by the B. Tear tractor r.o.g. mono. and the canard r.o.g. biplane and arrow-plane of T. W. Bennett, all three climbing well. 21st, T. W. Bennett again busy with arrow-plane canards, one r.o.g. and one h.l., both performing well. Some exceedingly good flights, better than was to be expected, were being obtained by the G. H. Kilshaw tractor in a rather heavy wind, biplane work being suspended on this account. In addition arrow-plane testing by B. Tear should be recorded. 28th, was typical of the other meetings. In addition to flying with the B. Tear negative-tip canard, the T. W. Bennett arrow-plane gave its usual display *de luxe*, the Bennett r.o.g. biplane also being put through its paces. The G. H. Kilshaw back-curved tractor again added some very good performances, this machine being the most consistent so far of club tractors. Later on some propeller tests were made. It is indeed extremely gratifying to note the extended activity in tractors, for in addition some promising flights have been made on the geared triple member *fuselage* tractor of T. W. Bennett, a new one by F. Lowe being almost ready for action. Considering the number of members able to take part in model construction at present, the club has cause to be satisfied with the amount of work carried through during August.



A model triplane, with two propellers, made by Messrs. John Fleming and George A. Cavanagh of the Aero Science Club of America. As shown it is fitted with rubber motors, but a compressed-air motor is being installed.

THE THOMAS AEROMOTOR.

It has been an open secret for some time that in order to meet their own requirements the Thomas Brothers Aeroplane Co. were experimenting with a motor which had been specially designed in their works at Ithaca. It is now announced that a new company, the Thomas Aeromotor Co., has been organised for the purpose of building these engines in large quantities, the first batch of which should be about ready for delivery. The new motor is of the V type of 150-180 h.p., working at speeds of 2,000 to 2,500 r.p.m., any desired propeller speed being obtained by gear reduction. Such high speeds have been rendered possible by the employment of large valves, exceptionally light pistons made of a special alloy and connecting rods machined all over and made from forgings having an elastic limit of 280,000 lbs. Although primarily designed for use in Thomas machines of the military tractor type, provision has been made to adapt it for use on pusher biplanes, and on military machines having twin air-screws. In order to meet latest military requirements, the motor is equipped with all accessories, such as self-starter, wireless drive, tachometer, &c.

In connection with the design of the engine it is interesting to note that, in addition to Mr. W. T. Thomas, two members of the firm are Messrs. Harold N. Bliss and George H. Abel, both of whom were associated with the production of the Sturtevant aeronautical motor, of which particulars were given in "FLIGHT" some time ago.



Paints and Varnishes.

WITH over 100 years of experience in paints and varnishes, Messrs. Thos. Parsons and Sons of 315-317, Oxford Street, London, W., who were established in 1802, may justly claim to know something about these materials. They have for some little time now been giving attention to the requirements in this direction in connection with aviation, and are now prepared with either paints or varnishes for any part of the aeroplane, and in view of their unique experience one may rely upon getting the best results from any material supplied by them. One speciality is a paint for wings, which can be supplied in any desired tint or colour.

Messrs. Parsons will be very pleased to receive at their showrooms in Oxford Street anyone who is desirous of information or advice in connection with paints or varnishes. In any case, their showrooms are well worth a visit, if only to inspect the Parsons Colourmeter, by means of which any desired shade of colour can be produced in a few moments, and a record of that particular shade kept. The same shade can also be obtained as a paint, &c., within a few hours.

The Reopening of Brooklands.

It will be gratifying to many of our readers to hear that Brooklands is once more open to the general public, and although visitors will not be allowed on the flying ground unless accompanied by a member of the Brooklands Automobile Racing Club, a very good view of the flying can be obtained from the paddock and other enclosures. The B.A.R.C. regulations regarding the use of the track will be rigidly enforced, and those who are unacquainted with these regulations should ask for a copy at the entrance gates. Motorists should take care not to obstruct the roads to the flying ground and to comply with the instructions of the military. Until further notice the track will be open from 9 a.m. to 6 p.m.

Gilbert Returns to Switzerland.

It appears that the decision of the French Government to order Gilbert to return to Switzerland was the result of a complaint made by the Swiss Government to the effect that the letter in which Gilbert withdrew his parole reached them too late to enable them to take measures to prevent his escape. Accompanied by Capt. Dufour of the Swiss Army, Gilbert arrived at Berne on Sunday, and after being informed that he was regarded as an interned officer not on parole he was taken to Hospenthal from where he escaped. It was officially announced in Paris that the Swiss Minister at Paris called personally at the Ministry of War to express to M. Millerand "the thanks of the Swiss Government for the courteous and chivalrous decision of the French Government regarding Flight Sub-Lieut. Gilbert."

Pégoud Meets his Death.

By the death, in mid-air, from a German bullet, of Pégoud, French aviation has lost one of its most popular figures and withal one who has a vast amount of splendid work to his credit in the great struggle during the past twelve months. The official report issued in Paris gives the following details of Pégoud's last fight.

"In the course of a plucky fight on Tuesday morning over Petit Croix Second Lieut. Pégoud met with a glorious death. The aviator, who was alone in his aeroplane, made a daring attack on a German machine, upon which he fired, emptying several belts of ammunition from his machine-gun. He was himself hit by a bullet, which killed him instantaneously. The machine fell to the ground within our lines."

Pégoud will, of course, go down to history as the man who demonstrated that it was possible to loop the loop voluntarily. He learnt to fly on a biplane in February, 1913, but in June of that year he tested the Bonnet parachute and then demonstrated the "corkscrew twist" and the "loop" on a Blériot monoplane. On the outbreak of war Pégoud, who was only 26 years of age, rejoined the army and was posted to the flying corps. It is stated that he had been responsible for bringing down six German aeroplanes and a balloon. Besides being promoted to Second Lieutenant he had been awarded the *Medaille Militaire* and the *Croix de Guerre*.

The Attempted Air Raid on Paris.

THE *Morning Post* correspondent in Paris on August 29th gave the following account of the attempted raid on Paris:—

"For the ninth time since the beginning of the war German aviators yesterday made a raid on Paris. Six German aeroplanes, flying at a great altitude, were discovered. Three of them came from the Soissons district and three from the Compiègne district. They dropped a number of bombs. The only damage reported is one army horse killed at Fontenay-sous-Bois and two male nurses and a child at Compiègne."

"The aeroplanes, finding themselves targets for a heavy fire, retired hastily, and when they reached the neighbourhood of Senlis found that the aerial patrols had been already warned. The squadron of French aeroplanes at once gave chase. The commander of the squadron, Captain Brocard, singled out an Aviatik and pursued it at an altitude of over 11,000 feet. Having the advantage in speed, he got within twenty yards of it and opened fire with a machine-gun. The Aviatik burst into flames and plunged into the forest of Halatte, north of Senlis. The German pilot, shot through the head and breast, was dead before the machine reached the ground. The other aeroplanes succeeded in escaping."

A German Aeroplane Seized by Holland.

WRITING on August 28th, the *Morning Post* correspondent at Amsterdam said:—

"A German aeroplane on the way from Belgium to the fortress of Wesel landed on Dutch territory near Venlo to-day. The aviators, observing that they were on Dutch soil, attempted to escape, but the Dutch frontier guards prevented this. Both, one of them an officer, were interned."



Aeronautical Patents Published.

Applied for in 1914.

Published September 2nd, 1915.

- 16,969. DEUTSCHE LUFTSCHIFFHALLEN-BAU GES. Airship sheds.
- 19,572. G. H. SHORT. Planes for aerial machines.
- 19,774. A. E. DOWNING. Flying machines.

Applied for in 1915.

Published September 2nd, 1915.

- 77. SUNBEAM MOTOR CAR CO. AND L. COATALEN. Driving mechanism for aerial propellers.
- 2,419. ALBATROSWERKE GES. Fastenings of aeroplane rods and struts.
- 2,420. ALBATROSWERKE GES. Planes for aeroplanes.
- 3,217. F. BERGERY-DEROULE. Projectile to be discharged or dropped from aircraft.

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.

Telegraphic address: Truditur, London. Telephone: 1828 Gerrard.

SUBSCRIPTION RATES.

FLIGHT will be forwarded, post free, at the following rates:—

UNITED KINGDOM.			ABROAD.		
	s.	d.		s.	d.
3 Months, Post Free...	3	9	3 Months, Post Free...	5	0
6 " " " " " " " "	7	6	6 " " " " " " " "	10	0
12 " " " " " " " "	15	0	12 " " " " " " " "	20	0

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 44, St. Martin's Lane, W.C., and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.